

NORTHROP-NORAIR NEWS

VOLUME XX

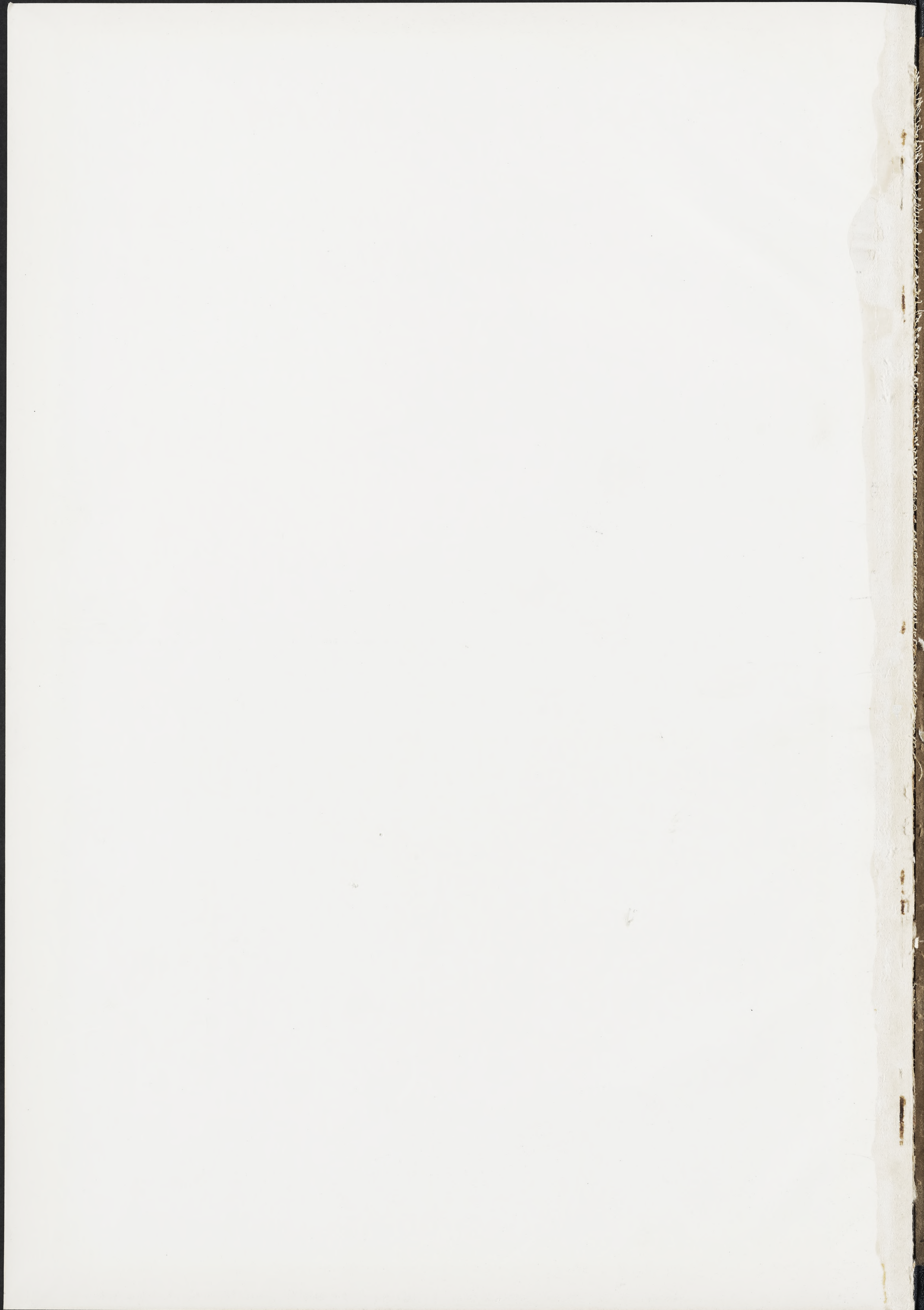






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# Northrop-Norair News

Issued biweekly by Norair Division of Northrop Corporation

• Wednesday, December 20, 1961

AWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, RAPID CITY, EL PASO

## A Merry Christmas And Happy New Year



To all Northrop personnel:

As we near the end of another year of working together at Northrop, I wish to express my appreciation for the contributions each of you has made toward attainment of our goal of a stronger and ever advancing company.

We moved ahead in 1961, and with our continuing efforts we can look forward to even greater progress in 1962.

Mrs. Jones and I extend to all of you and your families our warmest greetings for the Christmas holidays and our best wishes for a happy New Year.

**THOMAS V. JONES**  
Northrop Corporation  
President



To all Norcrafters:

Mrs. Nolan and I take pleasure in wishing all of you in all plants and facilities a merry Christmas and a happy New Year.

The past year has been a good one for Norair. We made excellent progress on the T-38 and on our Boeing subcontracts. We made significant contributions to the nation's defense at T-2 site, and in many other areas.

Our research and development, our engineering programs show unmistakable marks of maturing into new contracts.

We look with confidence to 1962.

It is a pleasure to be part of such a fine team.

**DICK NOLAN**  
Corporate Vice-president  
and Norair General Manager

## NOLAN ANNOUNCES PROMOTIONS FOR BOB LLOYD AND WELKO GASICH

As part of Company high level personnel assignments, Corporate Vice-president and Norair General Manager Dick Nolan, has



F. W. "BOB" LLOYD



WELKO GASICH

announced promotions for Norair's Vice-president, Manufacturing, Bob Lloyd, and W. E. Gasich, director of Advanced Systems.

Mr. Lloyd has been made vice-president and Division assistant general manager-Operations.

Mr. Gasich has been appointed vice-president and Division assistant general manager-Technical.

Stated Mr. Nolan, "The exceptional performance over the years of these two men gives me confidence and a great deal of personal pleasure in welcoming them as my assistants in directing the continuing success of Norair."

Subordinate organizations reporting to Messrs. Lloyd and Gasich will be announced shortly.

Mr. Lloyd joined Northrop in November 1941 and progressed steadily through the positions of general foreman, assistant superintendent of Production Control, superintendent of Manufacturing Control, assistant factory manager, general superintendent and director of Manufacturing Engineering.

In these positions he directed key manufacturing activities in numerous major Northrop projects, including the P-61 Black Widow night fighter of World War II fame and the F-89 Scorpion all-weather interceptor. His development and implementation of modern tooling methods

and machinery have made Northrop one of the lowest cost per pound manufacturers in the aircraft industry.

Mr. Lloyd was born March 5, 1917 in Boston, Massachusetts. His entire career has been devoted to the aerospace industry.

Mr. Gasich joined Northrop in 1953, his first assignment being chief, Preliminary Design. In 1957, he was made director, Advanced Systems section, where for the past four years he has been responsible for advanced planning and advanced design in the fields of manned aircraft, missiles, and space systems for the Norair Division.

A notable achievement was his 1957 publication, "New Concept in Lightweight Aircraft, the Northrop T-38 Supersonic Trainer."

Mr. Gasich was educated at Stanford University where he received his A.B. in mechanical engineering in 1943 and his M.S. in aeronautical engineering in 1948. He also received his Professional Degree of Aeronautical Engineering in 1948 from the California Institute of Technology.

## Jones Announces New Space Labs

**HORNER WILL BE GENERAL MANAGER**

Northrop Corporation has embarked upon a program to substantially expand its space research and development work through establishment of the Northrop Space Laboratories. President Thomas V. Jones told Company shareholders at the annual meeting held at Norair last week.

The importance given by Northrop to this new organization is emphasized by the fact that the Company's Senior Vice-president — Technical Richard E. Horner, will be in charge as general manager, Mr. Jones said. Mr. Horner was the first Associate Administrator of the National Aeronautics and Space Administration.

Headquarters for the new scientific research organization will be at Hawthorne. Funding has already been allocated for the construction of additional space laboratory facilities.

Noting the Company has furnished a wide variety of subsystems and components for existing space programs, Mr. Jones declared, "We are preparing to move into the field of system management on major space programs. We are gearing ourselves

for this expanded activity by establishing the Northrop Space Laboratories. We are confident this new mobilization of our capabilities will broaden our participation in the nation's space programs."

Programs of the new space laboratory will augment Northrop's already extensive



RICHARD E. HORNER

space research activities.

The Company's space projects include work in the field of space guidance techniques employing advanced automatic star tracking devices, the recovery system for

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## George Douglas to Head Radioplane Division

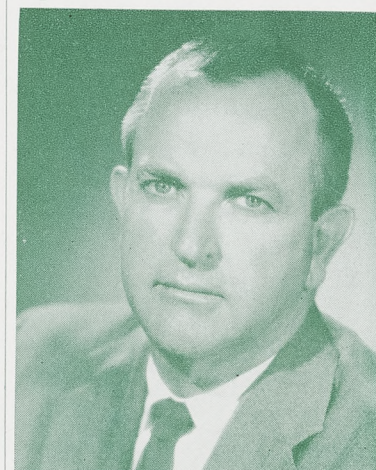
George Douglas, vice-president, Engineering, Norair Division, has been promoted to the post of Corporate vice-president and general manager of the Radioplane Division, it has been announced.

Mr. Douglas will succeed M. W. Tuttle, who had asked to be relieved from his duties for health and other personal reasons. Mr. Tuttle will remain with Northrop as staff assistant to the president so that the company can continue to have the full benefit of his long experience in the defense field. Both appointments become effective January 1.

Radioplane Division, with its headquarters presently at Van Nuys, California, is the nation's leading producer of drone aircraft and target missiles. A complete new science center and manufacturing facility is currently under construction for the Radioplane Division at Rancho Conejo in Ventura County, California.

Mr. Douglas has been with Northrop since 1953 and has been a vice-president of Norair

since 1957. He has had extensive experience in the design of advanced weapon systems and has directed Northrop engineering on such projects as the T-38 Talon supersonic trainer, the N-156



GEORGE DOUGLAS

limited war fighter, the Snark intercontinental guided missile, and the Scorpion F-89 all-weather interceptor. In earlier posts with Convair and North American Aviation, Mr. Douglas had been associated with the B-24,

(Continued on Page 2)

### Secret Weapon at Rapid City

By Aerospace Reporter

See Insert Section





## On Schedule for 18 Months States Colonel Clark in News Interview

*Last Christmas the Northrop-Norair News published that Air Force contracts for the entire Northrop Corporation including Norair Division, were "—100 per cent concurrent, on time, with all commitments met."*

*For comments on our position now, one year later, your editor last week called on Lt. Colonel Charles W. Clark, Northrop AF Plant representative.*

**Editor:** Colonel Clark, a year ago, we were on schedule on all Air Force contracts. We were very proud and happy to announce this achievement. Where do we now stand, a year later?

Colonel Clark: Not only are all Northrop contracts on schedule today, but they have been all during the year. Actually, Northrop has been on schedule for the past 18 months. For a while, things looked rather black for December deliveries of the T-38. Several abnormal things occurred all at once. The Norair team worked very hard to isolate and solve difficult problems. As a result, we are now confident that December deliveries will be met, and without working through the holiday period.

**Editor:** Would you like to say a word to Norcrafters about the T-38 and its role in Air Force plans?

Colonel Clark: The manned aircraft today has a prominent role in the Air Force, and will continue to have for some years to come, missiles and space notwithstanding. Until the T-38, we had no really satisfactory trainer to qualify our pilots in first line Century Series fighters like the F-104, F-105, and F-106. The T-38 is supersonic, has basically the same flight characteristics as modern fighters, and affords the added safety of a two-engined airplane. It bridges the gap between primary trainers and first line fighters splendidly. It occupies an important place in future Air Force plans.

**Editor:** What is the biggest job to be done, now, today?

Colonel Clark: To borrow an expression used by your president, Mr. Jones, our biggest job is to "put the dollar sign in the technical equation." Before World War II, there were so few really good and feasible ideas for military weapons that we had a sufficient number of dollars to exploit them. Today, the world is in a virtual explosion of technology. There are many new and feasible concepts but we can afford to develop only a few of them.

Even so, the defense budget is nearly \$50 billion a year (compared with a gross national product of just over \$500 billion). The military planners already must discard "essential" weapons ideas in favor of those "absolutely essential."

This situation presents a tremendous challenge to industry. We must get as much for our dollars as we possibly can, without sacrificing technical excellence.

Northrop has stepped up to this challenge. You are developing modern techniques in keeping with the job you must do. To mention just a few items: Automated Operations Control, Central Data Processing, PACE, and Quality Control-Manufacturing teamwork. But the real control of the "dollar in the technical equation" is exercised by the individual employees. Those who overcame the obstacles in the way of the December T-38 delivery schedule contributed magnificently. Others who recently did an outstanding job was the group which minimized the effect of the Nortronics fire in the GAM-87 area, turning what could have been a major disaster into a minor incident.

It may interest you to know that the T-38, as good as it is, was not bought because of its design alone. Economics proved to be a very important factor in the decision. Northrop can produce it at low cost and the Air Force can operate it at low cost. Result, the T-38 training program total cost compares favorably with a similar T-33 training program which it replaces.

The T-38 Talon represents a well-balanced equation. Intelligent human effort has resulted in a technically fine product at minimum cost. We in the Air Force are just as proud of it as you are.



## T-38 Milestone For Christmas!

**ONE HUNDREDTH T-38**—Fresh off the Hawthorne assembly line and ready for transport to Palmdale, #5200, the 100th Talon trainer, marks production milestone for the year. Norcrafters from fabrication, assembly, Quality Control, Transportation, send the airplane on its way with best wishes to one and all. First test Talon left Hawthorne factory door for Edwards in March of 1959. First production airplane was transported to Palmdale in May 1960. Fifty-three airplanes are already in service with the Air Training Command.

## PLANT SERVICES LISTED FOR THE HOLIDAY, SWITCHBOARDS OPEN

There will be telephone service during the holiday as follows.

At Hawthorne, switchboard service from 7 a.m. to 1 a.m. on December 26, 27, 28, and 29.

In Beverly Hills, switchboard service from 8:30 a.m. to 4:30 p.m. on the same dates.

There will be telegraph service as follows.

Communication Center service from 7 a.m. to 6 p.m. on December 26, 27, 28, and 29.

Mariposa's switchboard will be closed.

There will be mail service at

the Hawthorne Plant One Mailroom from 8 a.m. to 12 noon on December 26, 27, 28, and 29.

Correspondence Control, Engineering Building, will process incoming mail from 8:30 a.m. to 12:30 p.m. on December 26, 27, 28, and 29.

The Group Insurance office will be closed during the holiday. Norcrafters anticipating hospitalization are asked to secure the forms ahead of time, at least by 4:45 p.m. Friday, December 22.

The Norair hospital will also be closed during the holiday. Plant emergencies, however, can be taken care of by calling extension 2211.

The cafeteria will be closed during the holiday.

## Radioplane

(Continued from Page 1)

B-36, TDR-1 Navy torpedo drone, T-28A trainer, and was project engineer on the F-86D interceptor.

Mr. Tuttle has been with Radioplane for the past ten years and has been general manager and a vice-president of Northrop since 1957. For the past twenty years he has been active in the field of target drones and guided missiles.

## INCREASE IN PAYROLL TAXES DUE IN '62

There will be an increase in payroll taxes for both Norcrafters and Company on January 1, it has been announced.

Social Security tax (FICA) rate will go up from 3 per cent to 3 1/8 per cent for employee and employer. The base on which the tax is collected remains the same at \$4800. In other words, 3 1/8 per cent will be deducted from the first \$4800 paid in 1962.

State Disability and State Unemployment insurance will be increased by upping the base figure, but the rate will remain the same. The SDI (paid by employees only) will be raised from the \$3600 base to \$4100. The SUI (paid by employer only) goes up from a base of \$3600 to \$3800.

FICA stands for Federal Insurance Contributions Act. SDI means State Disability Insurance. SUI means State Unemployment Insurance.

## Space Lab

(Continued from Page 1)

the Project Mercury capsules which brought Astronauts Shepard and Grissom safely back to earth, research studies in the development of space payloads, space rendezvous, space refueling and plasma propulsion, and a wide variety of precision space components.

In addition to accelerated space activity, Northrop's major goals for growth are in the fields of manned aircraft, missiles, commercial products and international sales, Mr. Jones declared.

Shareholders voted approval of a two-for-one split of the Company's common stock. The distribution will be made January 12, 1962, to shareholders of record at the close of business on December 22. The Northrop board voted the split, subject to shareholder approval on September 20.

**Northrop-Norair News**

VOL. 20 No. 1

1001 E. Broadway, Hawthorne, Calif.  
A NORTHROP CORPORATION  
PUBLICATION  
Published every other Wednesday  
NORAIR DIVISION

CHARLES BRADFORD, Editor

Permission to republish material with credit to Northrop-Norair News will be granted. News office extension—2456. Outside lines—OR 8-9111, OS 5-4611.





### RIDES WANTED

7:30 a.m. — 4:15 p.m.

GARDEN GROVE & BUENA PARK, Anaheim. George Smith, ext. 2039, 2069, LA 2-3697. 3

8 a.m. — 4:45 p.m.

LAMPSON & MAGNOLIA, Garden Grove. J. Bullock, ext. 518, 519, LE 9-1375. 5  
COMPTON & CRENSHAW BLVD., Gardena. Patti L. Currie, ext. 518, OS 9-6290. 5

### RIDES OFFERED

7:30 a.m. — 4:15 p.m.

GARDEN GROVE & BUENA PARK, Anaheim. George Smith, ext. 2039, 2069, LA 2-3697. 13

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

### FOR SALE

BICYCLE, 26", girl's, Schwinn, \$20; radio, RCA, console, 7-wave band, w/remote control, \$20. FA 0-0154. A

PIANO, Baldwin Acrosonic spinet, 5-yr-old, \$575. OR 8-2728. A

BICYCLES, boy's, 3-spd., \$50; 10-spd. Derailleur, \$75; movie camera, Yashica, 8-mm, turret lens w/case & lite meter, \$80; Acoustcraft speaker enc., walnut finish, \$15. FR 6-2110. A

HAND BAG, lady's, lucite, cost \$25, \$5. OR 3-0462. A

ENLARGER, photo-type, Leitz, 35-mm, w/filter, \$75. NE 1-4376. A

TV, portable, & table, \$12.50; office desk, steel, 32x60 & steel swivel chair, \$65; dinette table, round, chrome, 3 chairs, \$10; floor lamp, reflector-type, \$5. VE 9-7378. A

CAR RADIO, Ford, \$15. DA 9-2317. A

BABY PEN, Cosco, \$20. FR 4-3876. A

TRAILER, hvy. duty, 4x8 luqaqae, new tires, \$25. OS 6-5253. A

SURFBOARD, Gomes, 8'x3", \$85. EX 8-3840. A

GO KART ACCESSORIES, 6 hp ena., w/centrifugal clutch, \$25. EA 2-3420. A

TRAILER HOUSE, 35', Fleetwood, furn., \$2200. OS 6-9338. A

HOUSE, Orange County, 4-mo-old, 20'x 23' living rm., fireplace, 3-bdrm., 2 baths w/marble pullmans & stall shower, den-dining rm., breakfast bar, carpeting & drapes, built-ins, block wall fence, professionally landscaped, glass sliding doors lead to patio, 2-car garage, \$500 dn., \$19,950. OS 6-1365. A

ACREAGE, in Joshua Tree, Calif., \$375 acre. LA 1-2073. A

GUITAR, Martin D-18, \$90; guitar, Gibson, elect., w/Fender amp., \$80; banjo, 5-string, w/case, \$75; camera, Retina, 35-mm, f2.0 50-mm lens, \$90. FR 5-5139. A

STEREO TUNER, Arkay FM/AM, \$45; dual amp. pre-amp, 28-w, Eico, Model 81, \$55. EX 1-4860. A

FORD CUSTOMLINE, 1955, V-8, w/over-drive, 2-dr., \$395. 371-6328. A

BICYCLE, boy's, 24", Schwinn Flying Star, equipped w/Bendix 2-spd. gears & standard New Departure coaster brake, speedometer, carrying rack & stand, \$15. 645-0945. A

SURFBOARD, 9', clear color, \$45. FR 8-2640. A

AIRPLANE, 1941 Piper J5A, dismantled, fuselage sandblasted & primed, ready for reassembly, 75 hp Continental ena., \$350. TO 7-1182. A

SLIDE RULE, Post Versalogo, \$18; drawing instruments, Lotter, \$20. FR 2-6628. A

TRUMPET, Olds Mendez, 6-yr-old, good tone & valve action, \$100. OS 9-7656. A

SHOWER DOORS, \$35; living rm. furniture, 2-5-yr-old, \$15 & up. DA 4-1843. A

TOYS, bowling game, 15", plastic, \$2.50; visible man, 16" model, \$2; Tinker Toy set, 200-pc., \$1. FA 8-5958. A

FACIAL EXERCISER, Zeigler, cost \$200, \$140. FR 2-3283. A

KITTENS, Siamese, pedigree papers, vaccinated, \$25 & up. OS 5-1842. A

FORD, 1952, Customline, 4-dr., good trans. car, r/h, good tires, \$225. PL 5-2723. A

TOYS, child's rocking horse, \$15; roadster, \$10; tricycle, \$10; Hawthorne Christian School Uniform, girl's, size 6 & 7. 371-8073. A

### FOR SALE

OUTBOARD ENGINE, Scott Atwater, 1956, 33 hp, \$90; automatic transmission, Chev. Powerglide unit, 1950, \$20. PL 1-2463. A

TRICYCLES, newly painted, small, \$5; med., \$3. OS 5-3098. A

TRANSCIEVER, Falcon Mark 4, Model C, citizens band, w/4 transmit crystals, 1 receive crystal, \$160; TV, Packard Bell, 20", \$35; coffee table, blonde, \$10. DA 6-1572. A

JAGUAR, 1954, XK120 M roadster, needs much mechanical & some body work, red lacquer paint, w/extras, \$400. Box 101. A

SPEEDBOAT, Glen-L-Desian, remote control, glassed hull, upholstered int., w/trailer & running lites, \$195. DA 5-2851. A

FORD COUPE, 1947, w/1953 Chrysler ena., tuck & roll, racing slicks, stick-shift, \$450. OS 6-3305. A

INTERCOM SYSTEM, compact, 110-volt, commercial-type, w/3 master stations & 200 feet of wiring, \$35. NE 8-3131. A

FORD, V-8, 1954, 4-dr., New tires & battery, \$385. OS 6-7109. A

### WANTED TO BUY

RENAULT, wrecked, ena. & trans. must be in good condition. EA 2-5853. B

### RENTALS OFFERED

LARGE ROOM, pvt. entr., kitchen privileges, \$10 wk. OR 2-1240. E

DUPLEX, 2-bdrm., upper, child ok., \$87.50. PL 4-4556. E

APT., lge., front, 2-bdrm., built-ins, disposal, garage, F/A heating, near Northrop, \$120 mo. OS 6-6370. E

### RENTALS WANTED

SINGLE GARAGE for 6-month period. VE 9-7378. F

### CHILD CARE WANTED

CHILD CARE WANTED from noon to 5 p.m., Monday-Friday. DA 6-0979. H

CHILD CARE WANTED, live-in, small salary, PL 6-2784. H

### PERSONALS

SINCERE APPRECIATION for your expressions of sympathy during the loss of my mother, Mrs. Ida Dunlevy. KAY M. WALKER. L

### FOR SALE OR TRADE

HOUSE TRAILER, 1958, Biltmore, will trade for smaller trailer or sell my equity for \$1200. OS 5-0859. M

## Norcrafters Get Doors at Discount

Northrop Architectural Systems offers all employees of Northrop Corporation, its divisions, and subsidiaries, sliding aluminum doors at special discount price ranging up to 20 per cent.

Catalogs and brochures may be viewed in the Personnel Activities office, Plant One.

For complete information on prices, and other data, call Charlie Herman, Northrop Architectural Systems, ANgelus 2-6171, extension 216.

Doors are available with or without glass and with or without screens. You may purchase them installed or install them yourself. If you intend to do your own installation, NAS will ship them to you freight collect or you may pick them up at the plant which is located at 5022 Triggs Street, Los Angeles 22. Triggs Street is on the south side of the Santa Ana Freeway and just west of Altantic Boulevard.

It will be helpful and save time if you have the following information before you call.

Wall construction and thickness of wall.

Rough opening size.

Type of glass desired—3/16 inch crystal or 1/4 inch polished plate.

Is screen desired?

What direction is door to slide to open as viewed from outside?

## BUY BONDS

## NRC STAGES FULL MONTH OF EVENTS, GOLF AND BOWLING END SEASON

The NRC Good Time Table lists a full month of Norcrafter holiday events for December.

Practically all Norair facilities, NRC clubs, many departments and organizations have either

## Keg Rules For Holiday Bowling

What is a "scotch doubles"?

Many Norcrafters following the announcement that "scotch doubles" would be held Saturday, December 30 during the holiday, registered what-is-it inquiries. The rules and regulations as formulated by the tournament committee are as follows:

Tournament is open to Northrop personnel, family, resident employees, and persons presently bowling in NRC sponsored leagues.

Handicap will be 2/3 to 190 based on the highest 1960-61 book average; current highest average, 21 games or more as of December 1, 1961; and 1961 summer highest average, 21 games or more as of September 1, 1961.

Rules of play are (1) a scotch double team constitutes one man and one woman; (2) woman bowls first ball in first and third games, man in second game; (3) partners will bowl alternately until completion of game; (4) bowling entries unlimited but with different partner each time; and (5) all other rules of play as ABC and WIBC approved.

Entry fee is \$1.50 plus 50 cents prize fund for a total of \$2 a couple. Prize money will be distributed according to ABC and WIBC regulations.

Two trophies each will be awarded for first place with handicap and high scratch series. Prize list will be available at Personnel Activities offices Wednesday, January 2. All winners handicap will be verified.

For complete information call Personnel Activities, extension 2784.

## BILL LURIE IS NATIONAL NET CHAMPION

Norcrafter Bill Lurie does it again!

Third seeded in U.S. senior tennis circles Bill upset top-rated Chauncey Steele, jr. of Massachusetts to win the National Hardcourt Senior title, it is announced by John Potts, Norair tennis commissioner.

The matches took place at La Jolla. The score was 4-6, 6-3, 6-3.

Before meeting our Bill, Mr. Steele had been a very big tennis man in the east. He had an excellent year, had been runner-up at Forest Hills and as a consequence was top-seeded at La Jolla.

To make the outcome more doubtful, Bill's right shoulder had been giving him trouble and was considered off form due to limited practice sessions. After losing the first set, Bill overtook Steele in the second and raced to a 4-0, 40-30 lead in the third when a leg cramp hit him. He eked out 5-0 in spite of the cramp.

staged traditional NRC sponsored yearend gatherings or plan to do so before 1961 is over.

Edwards Norcrafters started the chain of events on December 2 with their Christmas dance.

Next in line was the children's Christmas party affair, a joint effort by Palmdale and Edwards which took place on December 14.

The next event was the Customer Service dance for Hawthorne personnel at the Elk's Lodge. This was on December 15.

On Saturday, December 16, two events took place at widely separated facilities.

Here at Hawthorne, Manufacturing Control held their annual dance at the Mayflower Ballroom in Inglewood and in far away Rapid City, Norcrafters at the T-2 site held their children's Christmas party. There could have been no lack of Santa and his reindeer realism in this one. South Dakota December weather being customary. The weather hung up frigid marks at Rapid last Saturday.

On Sunday, December 17, the annual children's Christmas party, a joint effort between Norair and Nortronics ES&E, took place at the Product Display Building. Santa arrived at this one in Rudolph the Red-Nosed Helicopter.

This takes care of what happened to date.

On Thursday, December 21, NRC sponsored Hawthorne Scout units, five in all, will hold their annual scout "family" Christmas

party.

The next Friday, December 22, one of the biggest Norair NRC events at Hawthorne will be the culmination of Adopted Family program when all boxes of gifts will be deposited at the Product Display Building for transmittal to needy folk throughout the area. The program, according to all reports, has reached a high this year in participation and many splendid gifts have already been brought in by the organizations.

Hawthorne Liaison Engineering will have their annual fling on December 23. It will be a dance at the Western Avenue Country Club.

Formal programs quiet down slightly over the weekend but get into a full speed ahead position on December 26 when the Northrop Corporation yearend chartered flight leaves on the Hawaiian holiday.

Also on December 26, many Norair Hawthorne folk will don woolen clothing and ski boots and motor to the High Sierras for the Mammoth Mountain ski trip. This can be exciting. (Your editor took a ride on that chair lift last summer. Give him a jet airplane doing aerobatics from 40 to 20 thousand feet any time.)

On December 28 and 29, the NRC yearend holiday golf tournament gets under way at Fox Hills and Los Coyotes golf courses.

The Hawthorne NRC bowlers wind up the excitement on Saturday, December 30, when the Scotch Doubles tournament will be held at the Beach Bowl.

## Red Cross Blood Bank Here for Night Shift

The mobile blood bank will do a night shift stand at Norair on January 9, it has been announced by John S. Breneman, director, Night Operations.

Hours will be from 4 to 9:30 p.m. The Red Cross unit will set up at the Product Display Building.

Donor applications are available through all organizations. When completed they should be mailed to Personnel Activities; Saturday, January 6 being the deadline.

## NINETY PAIR OF SHOES TO NEEDY FAMILIES

For Norair adopted families, 90 pairs of shoes.

The Division Shoe Store, specializing in safety-toes recently restocked the shelves with a new line. Left over to be surplused were 161 pair of perfectly good but out of date shoes.

A canvass of Norair needy families disclosed that 90 pair were of the right size and width to fit 90 members of the families.

The decision was quickly made and needy family gift boxes were suddenly more complete by the Christmas donation of this excellent long-lasting footwear.

"Apparently the ones he did get he took good care of," stated John.

Everyone agrees the Hardcourt Senior title was a fine win for Bill. A proper way to start the coming tennis year.

Day shift blood donors who would like to give blood are also invited to make an appointment at the "bank" either right after work or by returning later in the evening.

During the visit transportation pickup locations will be:

Plant One—Personnel Activities office and at the Engineering Science Center (northwest corner).

Plant Two—Nortronics Main Lobby.

Plant Three—East side of the Radar Hangar.

There is a real need for top participation. Norair's blood bank account is low.

Organization supervision and clerks have complete information.

## PRO BOWL AT A DISCOUNT, P-A HAS DUCATS

Personnel Activities will have special "employee" tickets for the big Pro Bowl game, January 14, it is announced by Charles Boyle, supervisor.

This all-star football classic, sponsored by the Los Angeles Newspaper Publishers' Association, will be staged in the Los Angeles Memorial Coliseum. Game time is 1 p.m.

This is the 12th annual east versus west meeting.

Norcrafters can obtain their discount exchange ducats from Personnel Activities which should be exchanged by January 12, two days before the game. Ticket discount savings is \$1.





**THE AWARD**—A handsome plaque with an American eagle in protective flight over the Safety Council's green cross. The award was given for Mariposa's performance during the period, July 1, 1960 through June 30, 1961. Mariposa was in Group A of the competition.

## Yuletide Greetings

Merry Christmas and a happy holiday season to all Norcrafters everywhere away from home. And especially those listed below.

### In the U. S. A.

Dayton, Ohio, Organizations L1000 and 191  
 Washington, D.C., Organizations M1000, M8000, and 192  
 Omaha, Nebraska, Organization 195  
 Huntsville, Alabama, Organization 196  
 San Antonio, Texas, Organizations 197, 8820, and 3740  
 Ann Arbor, Michigan, Organization 6002  
 Monsey, New York, Organization 6002  
 Middletown, Pennsylvania, Organization 8830  
 Cocoa Beach, Florida, Organization 8000  
 Renton, Washington, Organization 5000  
 Litchfield Park, Arizona, Organization 7310  
 San Diego, California, Organization 5110  
 Tulsa, Oklahoma, Organization 5110  
 El Paso, Texas, Radioplane Support  
 Edwards Air Force Base, Talon Test Force  
 Palmdale, T-38 Final and Flight  
 Rapid City, South Dakota, T-2 Site  
 Randolph Air Force Base, Texas, Organization 8810  
 Webb Air Force Base, Texas, Organization 8810

### Overseas . . .

Germany, Organizations 3010 and 3620  
 Iceland, Organization 8810  
 France, Organizations 200 and 3000  
 Japan, Organization 200

## Best in the West



**AWARD TO MARIPOSA**—Proud Mariposa Norcrafters, members of that facility's Safety-Conservation committee pose for photograph on occasion of presentation of award denoting first place, Warehouse Division in the National Safety Council's metals section safety contest. From left, seated are Ken Burnside, Lee Johnson, chief safety engineer; John Reed, Ray Strong, and Robert Hannum. Standing from left are Mel Cooper, George Putnam, safety engineer; John Stater, Albert Gordon, manager, Industrial Services, Los Angeles Chapter, National Safety Council; Tom Chittenden, chairman; R. W. Shearer, Elmer Jungclas, Don Feldtman, and Chuck Peterson.

## Best in The East

**AFTER MARCO POLO**—Roy Wolford, Reproduction Services, returns from five-week trip through the Orient. Japan, Taiwan, Hong Kong, Macao, Thailand, Cambodia, the Philippine Islands were way-stops for Roy and Mrs. Wolford on their first journey to the East. Note the man's proficiency with chopsticks, note teapot, teacup, kimono.



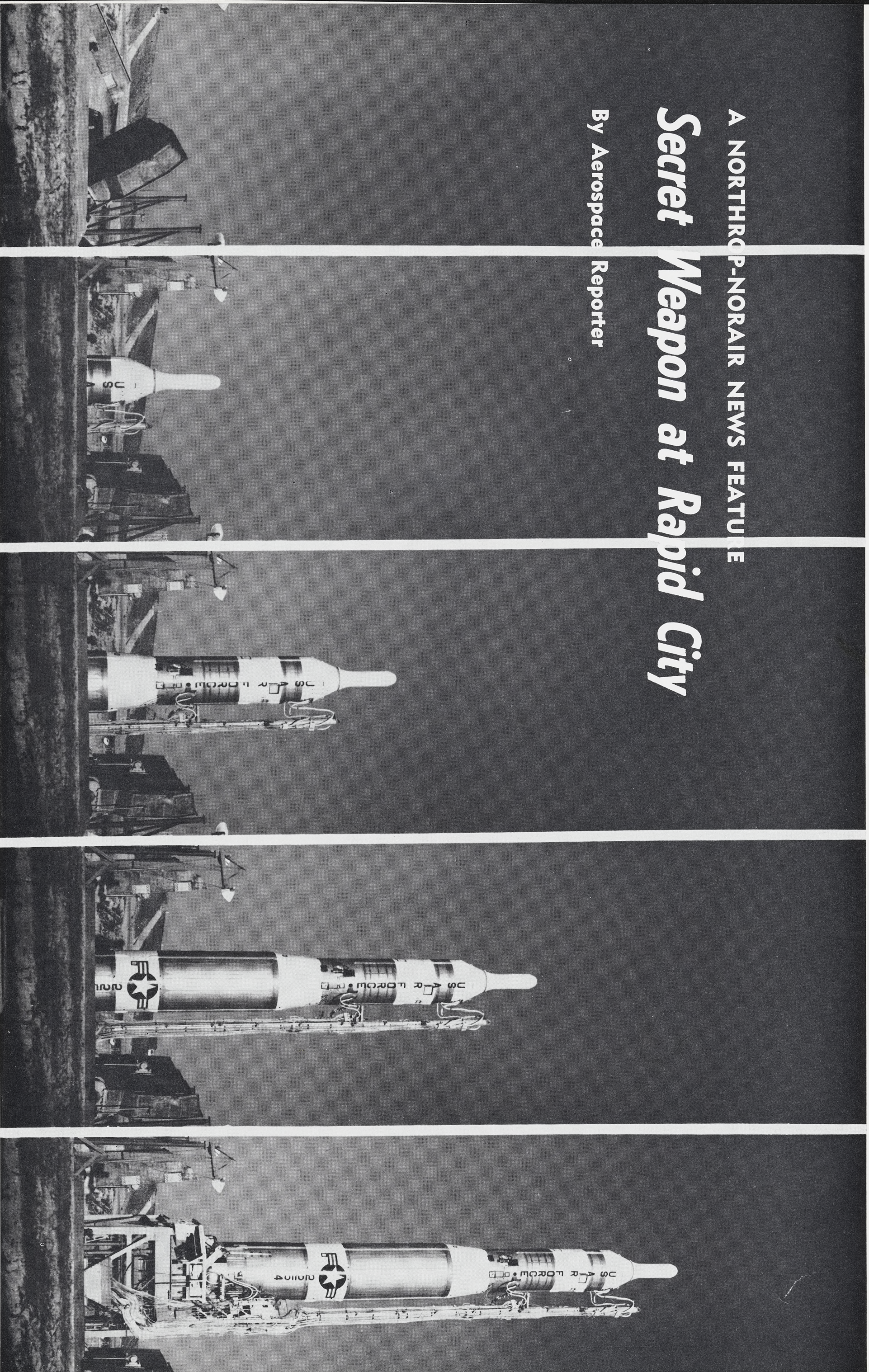
**SALONE INTERNAZIONALE** — T-38 Talon model and photo-murals were displayed prominently at the Eleventh Annual International Fair in Turin, Italy. Photo was sent to the News by Les Daly, Northrop-International Public Relations. Note that printed signs on the backdrop give Talon information in Italian.



A NORTHROP-NORAIR NEWS FEATURE

# *Secret Weapon at Rapid City*

By Aerospace Reporter





# SECRET WEAPON

## At Rapid City

It is a rapid journey to Rapid City, South Dakota.

Six miles high and 550 miles an hour puts you down in Denver in two hours. If you have left Los Angeles International Airport in the morning, this two hour part of the trip fetches Denver before noon. Then, two hours on the ground in Denver, long enough to go back to the Coast again, before you catch a Frontier Airlines Convair which takes you north across the plains country and into Rapid City.

It starts when Continental's Boeing 707 lifts off LAX. The brute strength of her four engines

puts you deep in the seat and the G's hold you there. During the takeoff run and the climb, you have a flash in which to see that aircraft are winged up to the new weird satellite loading system and people are boarding their airplanes and then your Continental

### By Aerospace Reporter

cuts the water injection and the climb rate sags slightly and then you are in a layer of high fog-smog. Next the right wing drops and the airplane pivots on that

wing tip majestically, turning but still climbing and here come the San Gabriel Mountains and next there is Palmdale and you make a quick search for the Palmdale Airport trying to see where the Norair boys are rolling out the T-38's and next you see the Barstow Freeway and you and the freeway cross the Mojave River and you see Hesperia and Apple Valley and already the San Bernardino Mountains are getting small back in the southwest.

No more smog.

By now, in spite of the speed and the altitude, you make up your mind to locate some of the desert places you have been to and you are able to do this by locating the major features of the landscape. The road to Needles, The Union Pacific Railroad tracks, a black thread on the earth. And the scar leading into the east is the new gas transmission line. The Providence Mountains and the New York Mountains are sombre in the haze. There is Lanfair Valley, a high and cool and mysterious plateau in the middle of the desert where men built an agricultural empire so many years ago and then left it, returning it to the kit foxes and the big horn sheep.

You mark the color of things at six miles altitude. Look down. It is bluish grey with black shadows leaning westward from the mountains and away from the morning sun.

### SPACE VOYAGERS

Look up. For a time all of you in the airplane, men, women, and children are space travelers, detached from all things, passing close to the planet Earth which hangs in the void and whose curve is plainly visible to the south and the east.

Look up and away from Earth and out beyond to deeper space it is exquisitely blue and high and far.

Another jet goes by, LAX bound. The speed of the two of you—1100 miles an hour—surprises you again. Delights all of you who see it, breaks down the bars of convention between strangers.

"Look—a jet going the other way!"

"Look at it go."

"Looks like a DC-8."

"It is a DC-8. I can tell by the tail. The tail is different."

The miles rip by below. The 707 is just getting her stride.

A voice on the intercom says, "This is your captain—Las Vegas is on our left. Lake Mead is on our right."

### THE ROCKIES

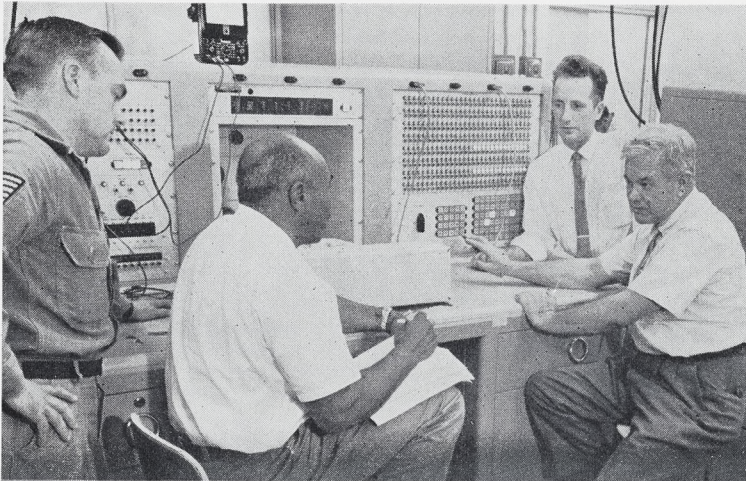
Valley of Fire, Hanksville, Green River, a tortuous, crazy switchback of a river headed south. And now the earth slants up and mountain peaks reach for the airplane. Snowy slopes like clouds hanging in the air are off to the southeast and then there is Aspen, Colorado and Pikes Peak stands boldly in the sky and then it is Denver and you come in for landing and walk the long distance to the terminal with the G forces of deceleration still like a hand on your stomach.

Out of a thousand strange faces along the concourse, one

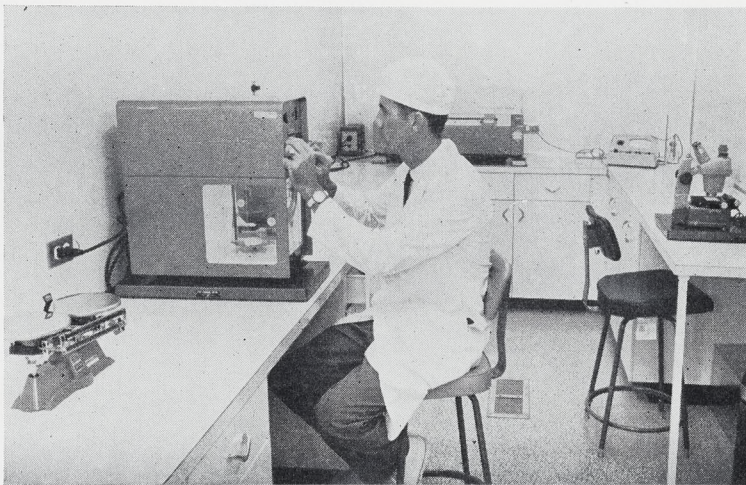
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**TOP BRASS** — Project leaders get together at social gathering sponsored by the Rapid City Chamber of Commerce, take time out from shop talk for a photograph. From left, Norair's Max Fayrweather, T-2 site manager and Jim Matthews, manager, Site Activation Department. At right is Warren Opitz, The Martin Company site manager.



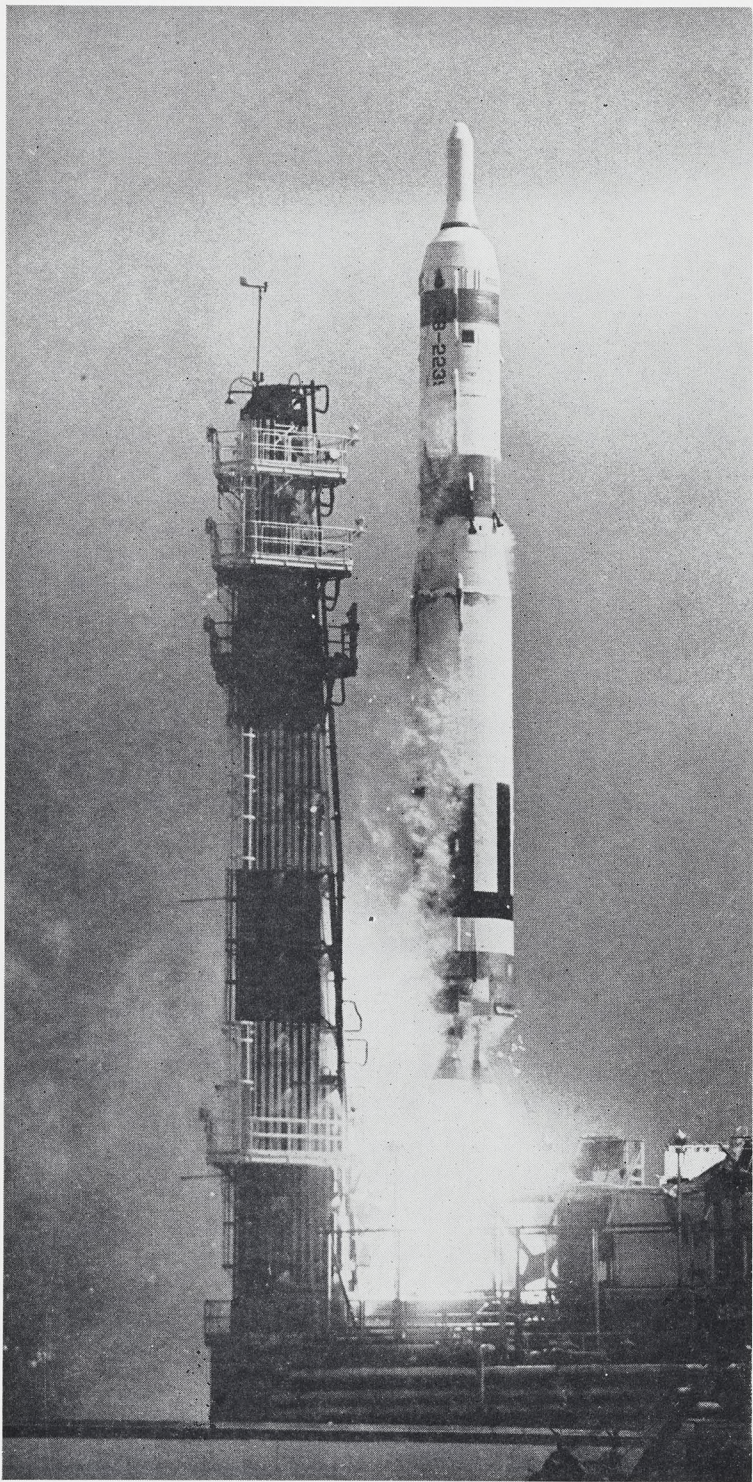
**ELECTRONICS CHECKOUT**—SAC man in training, Tech Sergeant Robert Maxwell, 850th SMS, observes closely as site electronics systems are checked out. From left, Norcrafters Tom Woods, field electronic checkout technician; Dale Horsley, lead engineer; and Sterling Corcoran, electronics specialist, compare findings on electronic chassis and module performance.



**ANTI-CONTAMINATION**—Photo shows the interior of the Norair Wiley Lab where cleanliness actually exceeds that of hospital surgery. Cryogenic materials and containers are put through rigorous examinations to assure safety in handling and reliability of operation. Norair Process Chemist Leo Boland, weighs tiny flecks of filtered contaminant on analytical balance. Material will be later identified and analyzed on infrared spectrophotometer. Binocular microscope is at right. Only three persons on the project are authorized to enter this laboratory which is built on frame of a 40-foot mobile home.



**SAFETY**—Safety aspects are everywhere evident in Norair operations at T-2 site activation. Hard hats are readily available in all buildings. Must be worn should you go to the site. Here Ben Knell, safety engineer, tries one for fit on Photographer Dave Saldana.



**IT BEGINS LIKE THIS**—This Titan blasted off from Cape Canaveral on a 5000-statute-mile journey down the Atlantic Missile Range. It is designed to be stored in underground silos protected from nuclear attack. Six operational Titan squadron sites now are under construction in California, Colorado, South Dakota, Idaho, and the State of Washington.

U.S. AIR FORCE PHOTO



(Continued from Page 2)  
is known to you. A grey-haired distinguished-looking man is Norair's Lee Smith.

"Colorado Springs. T-38 demonstration."

"Rapid City. Story for the News."

"See you."

And you pass and take your separate airplanes to your separate destinations.

... However, in winning the plains wars, the cavalry had a secret weapon. West Point. We had the management. And this is the weapon that prevails . . .

You board the Convair for Rapid City.

And the time goes. Coffee. Sandwiches. Reading. Waiting as the earth rolls southward, at a slower, closer rate, as is proper for piston-engined aircraft.

The Rocky Mountains are out of sight in the west. The plains are beneath you to the north and south and east and west of you. This is the biggest part of America. It is very big, and very wide.

It reminds of the Arctic for a prairie is as a lonely sea. The far ranchhouses are ships. The rivers are ocean currents. And the patches of ploughed earth are as ice floes wandering southward.

#### DOC AND DALE

In two hours you are coming into the place. The airport is on high ground. There is a wind. In

ago Peak or San Francisco Peak. Or by the same token, it could have been a modern-day Snark project, or the beginning of a Palmdale or Ontario.

Max Fayrweather, Andy Anderson, Ken Yost, Tommy Blair, Bill Monger and Fred Hertel. Ken McBride, Ben Knell, Gayle York. Twenty-year men, fifteen-year men, ten-year men. Weapons men. Men you had seen in

other places or on other projects where things were happening.

What was it this time?

"It is over toward the mountains, but in the prairie. That way," pointing southwest. "Site activation for the Titan. And it's big. Spelled with a capital 'B'. It started as a big hole in the ground. Many big holes. Gantries underground. Blockhouses underground. Lights, water, television underground. Your lunch pail underground. Elevators to ride you down and ride you up. And if comes the time to set a match to a Titan's tail, the SAC troops who press the button will be secure and safe through the whole drill."

Gene Musk, Howard Converse. Twenty-year men.

The work of such an assignment as a Rapid City story is

"Shake hands with Richard Tenfingers."

"And Al Dreamer."

You shake hands with two tall red men with great hooked noses and hard hands and with long rippling muscles in their forearms.

#### THE SIOUX

"We are Sioux Indians from Pine Ridge."

"Do you know the California tribes? The Cahuillas? The Palas? The Sabobas? The Palm Springs people?"

"We know Jules Strongbow," they said.

Schedulers, planners, transportation types, accounting and finance, safety, personnel, recreation, electronics, maintenance, staff, quality control, engineering, reproduction, computing, and more and more. The complete aerospace personnel spectrum.

And you begin to see the team.

Exotics are everywhere on the project.

"Shake hands with Leo Boland and Karl Bentz, cryogenics know-how men who hold the tiger by the tail."

Capability in action. Karl, assistant process chemist, testing bottled nitrogen to be used in site system purging. Twenty bottles this day. His thoroughness assures that the Titan will be ready when the time comes.

The Wiley Lab, a mobile contamination control laboratory built from a 40-foot mobile home trailer. To go into this inner sanctum of sterility with Process Chemist Leo Boland, a new Norcrafter from Creighton University, Nebraska, you must dress as a surgeon; white cap, white coat, white pants, and white sock-type covers over your shoes.

"The air within this lab is filtered down to 10 microns," states Boland. "Humidity is controlled within 30 to 45 per cent. Temperature is controlled at 73 degrees F. plus or minus 2 degrees."

The whiteness of the lab interior is almost blinding. The cleanliness is frightening. You are afraid to breathe.

And a world of electronics. Test equipment. Electronic chassis, beautiful consoles that remind you of Norair's Model 101. Modules. Components.

"Shake hands with Sergeant Maxwell, 850th SMS."

You shake hands. "Glad to know you, Sergeant."

He is a SAC man being phased in to take over when the job is completed. He and Norcrafter Tom Woods from Norair are at a Titan system simulator test stand, pouring over a six-inch high book of electronic diagrams.

#### PICKLE BARREL

Would he be one of the men underground out south of town when the time came?

Would his understanding of the system be complete?

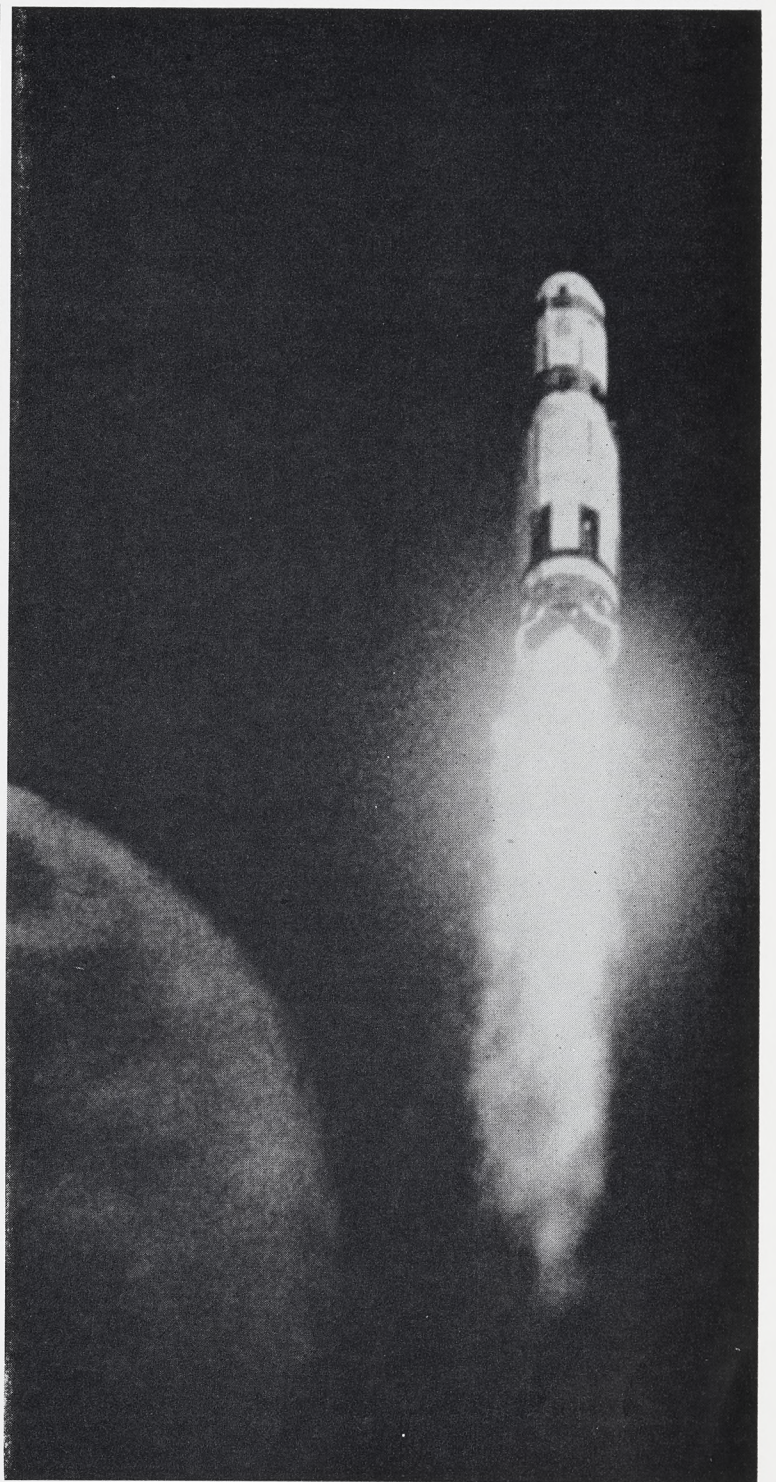
Would the giant Titans with their nuclear warheads whoosh into space and cross continents and oceans and impact each in their own "pickle barrel" in crushing retaliation?

You know they will.

You look at Sergeant Maxwell and Dale Horsley and Tom Woods and Sterling Corcoran. You know that here men are masters of electricity, chemistry, physics, mathematics, thermodynamics, logistics, astronomy, mechanics, and geology.

#### TO THE SITE

The site is forty miles away. With credentials and cameramen, you leave the town and go into the prairie and drive through the rolling country which is yel-



**TITAN'S TAIL**—In what is perhaps the most unusual photograph to come out of the ballistic missile program, an Air Force Titan appears to streak past the moon. The photo is an enlargement of a 35-mm frame from a tracking sequence shot during a recent Titan flight test from the Air Force Missile Test Center, Cape Canaveral. As the camera panned upward tracking the missile, it caught the moon in the background.

U. S. AIR FORCE PHOTO



**BUSINESS AND ECONOMICS**—Aerospace Reporter interviews Chamber of Commerce Manager Larry Owen to get facts and figures on the city's past, present and future. Largest income in the "seven-county area" is from the tourist dollar, \$41 million of them a year. Wholesale is next with \$25 million. Military expenditures excluding present heavy missile program have been running about \$25 million a year.

the west are low black mountains.

Doc Cook and Dale Oliver met us at the airport. There was the shaking of hands and comparing of notes on what is the latest from there and here, and chasing the baggage and the loads of camera equipment and finally out of the terminal and into the bright South Dakota sun and the wind which is not as strong now.

Rapid City is a smog-free place.

We left the high ground of the airport and took a dirt road that short-cut the regular way, curving around the small hills and through the ravines and then we were able to see the base. We could see tails of SAC's B-52 airplanes like saw teeth on the skyline and when we were closer the rows and rows of barracks-like administration buildings.

And then we were "home" again. Inside Norair buildings and offices it could have been Cape Canaveral, Presque Isle, Edwards, or LAX. Or Alamogordo. Or White Mountain. Or Santi-

always made much easier by helping hands from those on the project. In this case help came to Aerospace Reporter from all directions. Max Fayrweather, T-2 site manager, gave the run of the project. He also asked Doc Cook, staff to Max, and Dale Oliver, supervisor. Reproduction and Photo Services branch, to lend a hand. They did more. They lent two hands. Ken Yost, chief, Program Project group, gave Don Sherman, project master planning analyst, a man who knows just about all there is to know about the project, scheduling, places where things are and who is doing what and why.

Doc Cook, "downtown representative", introduced us to the city and the people of the city we needed to talk to. Don Sherman escorted us through the project, made a thousand phone calls to pre-arrange pictures, helped with names and titles, job functions and project history and stayed close by for two days.

low with autumn and ready for a winter that cannot be far away.

As you ride in the Company Ford, think about the people who came this way a hundred years ago and you know the feeling they must have had at the endlessness of valleys and hills and ravines. It would have been hard to lose your way in the big picture. Just follow the sun. But in the short range, as men say, you could have lost not only your way but your life. The country was made to order for the Indian and the way he had to fight.

Each slope, each ridge, even the deep grass, made for fine cover. Flanking operations must have been classical. Withdrawals very spooky. No problem of supply what with a million buffalo any way you wanted to look.

The Sioux and the Crow and the Blackfeet, even with bow and arrow, should have been unbeatable in this country. However in winning the plains wars, the cavalry had a secret weapon. West Point. We had the management. And this is the weapon that prevails.

You could say for the Indians, and without being funny for indeed it was tragic, that this was one case of too many Indians and not enough chiefs.

Today, these same plains can again see military history in the making. The weapon in the plain

is ahead of us. It equals the destructive force of 20 billion billion billion arrowheads, more or less, and all you have to do to put it to work is press a button. Think about the picture a minute.

But in one respect the weapon is no better than what Sitting Bull or Crazyhorse had to work with.

Without management, even an atomic bomb won't always keep your scalp where it belongs.

We checked through the efficient Wackenhut guard system at the gate. To one side a great black hole in the ground emits a slow cloud of diesel exhaust. "From the underground power system," says Don Sherman.

Massive concrete doors yawned open to the sky. "These doors seal the site from everything up here."

Down a steel stairway as it is explained that elevators soon will do the work of lowering people into the complex.

This is a world of concrete and steel, and cable and conduit and ducting.

#### UNDERGROUND

There is a ponderous revolving door made of steel and concrete. And this door no matter how it is turned always presents a solid face to the outside world, in case of nuclear attack, or any other kind. You follow Mike Long.

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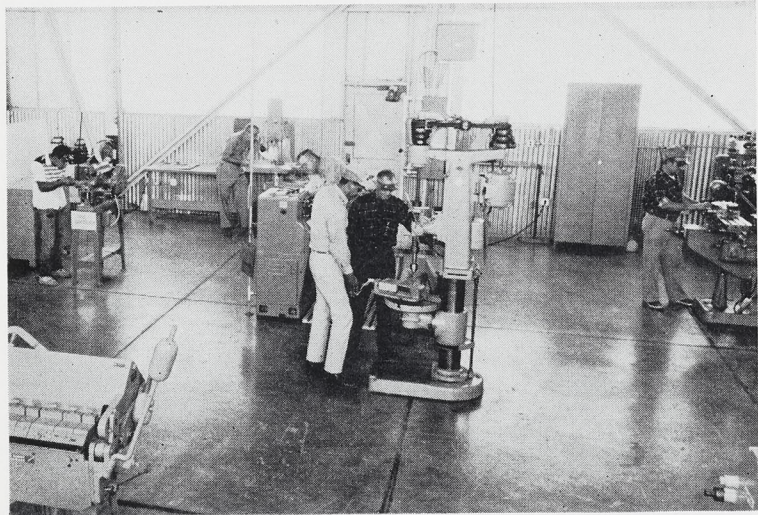


## Secret Weapon at Rapid City

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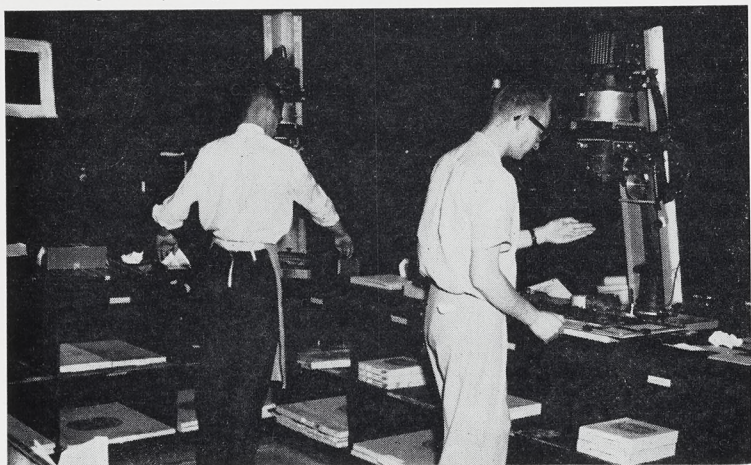
**VISITOR CONTROL**—Site Activation Task Force, SATAF, Air Force command for site activation, checks and screens all visitors for clearance and purpose of their presence at the base. Norcrafter Christa Hubbard, gives pass to Uhl Boggs of The Martin Company. Center is SATAF's Captain Bob Ward who compiles rating reports for all project contractors.



**SITE MAINTENANCE SHOP**—Young men of the Sioux tribe from nearby reservation at Pine Ridge join Northrop organization to help on Titan site activation. Al Dreamer at shaper, left, and Richard Tenfingers, front at drill press with longtime Norcrafter Howard Converse, maintenance foreman, make equipment repairs on the spot. Other Norcrafters in photo are in background. From left, Lyle Smith and Gerald Morgan, machinists both from Rapid City and at right, Don Larson, electrician, from Custer, South Dakota. Maintenance machine shop like all other project areas is kept in spotless condition.



**WAREHOUSE**—Norair responsibilities in materiel area are big ones. Each item and there are hundreds of thousands, must be receipted for, catalogued, stored, and inventoried. Here is a one-day shipment of cable brought by highliner trucks to Rapid City.



**MIDNIGHT OIL**—Norair Site Photolab men in the base darkroom turning out report prints for project status information. At left is Merrill Conklin, right is Mike Long.

Norair cameraman, a Rapid City boy who learned his shutters in Uncle Sam's Navy. You twist and turn and go down more stairs and steel ladders and on down until you arrive at the level of the control center and the powerhouse with its big diesel power generators.

The control center is an underground "blockhouse". The missile combat crew commander's console is a symphony in electronics. A man could play it like a Steinway and above are the countdown clocks and looking up you note that everything overhead is suspended by springs and when you comment, you are told that the entire room is so suspended. Insulated as it were against any earth shock made by God or man.

It takes time to become accustomed to being deep underground surrounded by steel and concrete, and workers. Electricians, welders, plumbers, engineers, check-out men, guards, even television experts, for the control center people have foregone the old make-do of watching a launch through mirrors. Now you can see it on a small crystal-sharp television screen that even now, months before completion, monitors what is going on outside above you, far above you on the South Dakota prairie.

### SERGEANT FALLON

You meet another of the SAC troops, Tech Sergeant Dick Fallon. This man is dogging the footsteps of Martin and Norair Quality Control men. "I 'buy out' jobs along with them," said Sergeant Fallon. "It's good practice and it teaches you the system."

You remember the Norair tech rep types who similarly "grow up" with an airplane or a missile. Scotty Johnson being one. There is no better way to know your weapon. If you buy it, each part of it, each weld, bolt, electronic circuit as you go, blueprint in hand, you will know that system.

"Our big work is coming," said Tommy Blair, 20-year Norcrafter, a very busy man, and top gun at the site you are visiting. "Check out and site activation. Everything we do now leads to that. The better we are now, the easier it will be then."

### MEN AND CABLE

You watch a man who is ar-

ranging electrical cable in a race-way. Each cable must fit easily beside its fellow cable, follow its own true course. They may not cross over each other. They may not cut corners or become confused.

"How many wires in a cable?"

"From one single strand to thousands. However many there are, each one has an important job. Each one must be right."

From electronic wiring as fine as a hair from a blonde child's head, to massive nuclear bomb-proof doors, each part and parcel of the site has a vital job to do.

A welder strikes an arc and knits heavy sections of steel flooring. Strength. A good welder is an artist.

An electronics specialist traces out his circuitry from console through chassis and module and through all the nerve centers of the complex. He is a surgeon tracing the lifeline of the system.

A sheet metal man fits ducting in the tunnels that will carry air for your lungs so that you may breathe in comfort and be efficient and clearheaded when the orders come about what to do with that big bird resting in a silo just around the bend. This man is a sculptor.

Tunnels, rooms, turns, men working. Men reading blueprints. Men welding. Men checking work already done. Men looking at gauges. Men walking. Men sweating. Men working.

We have been long hours at the site. The morning is gone. It is mid-afternoon. Time to go

In a South Dakota town called Hermosa, in the middle of the prairie sea, there was a stop for coffee; a restaurant, sparkling clean, served by a smiling woman in a white apron.

"Where is Manhattan?" you ask Don Sherman.

And this was America also. Good pie and good coffee in a small town on the road anywhere.

The weapon in the plain is in defense of this also.

### COMMUNITY

Site activation of the Titan at Rapid City is more than site activation. It is community activation as well.

People were brought to Rapid City from the four corners of the United States to get the job done. The Norair cadre consists mostly of management and technician types from the Snark project in

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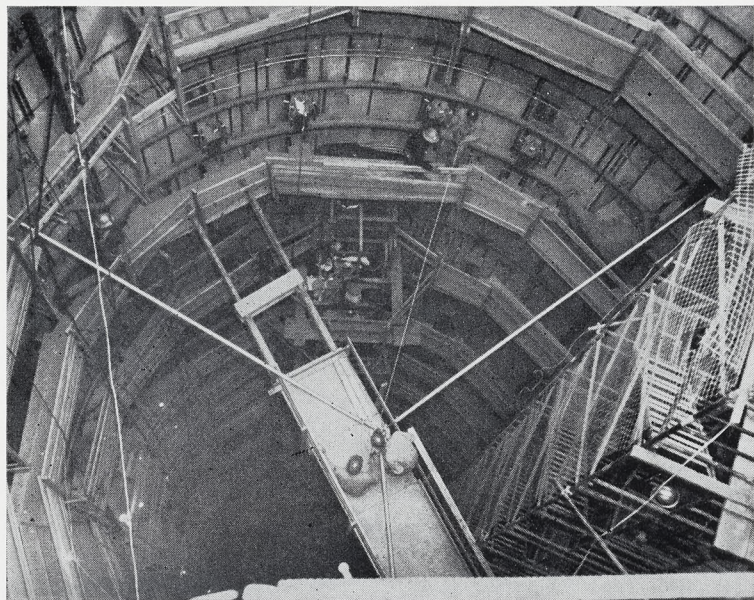


**MANAGEMENT CLUB OFFICERS**—Rapid City has very active chapter of Northrop Management Club. Here newly elected officers are from left, Virg Maniago, sergeant-at-arms; Don Sherman, program chairman; Ralph Branning, vice-president (Club head man at T-2); Jack Cushman, membership; Sandy Sandstrom, secretary; and Fred Hertel, treasurer.

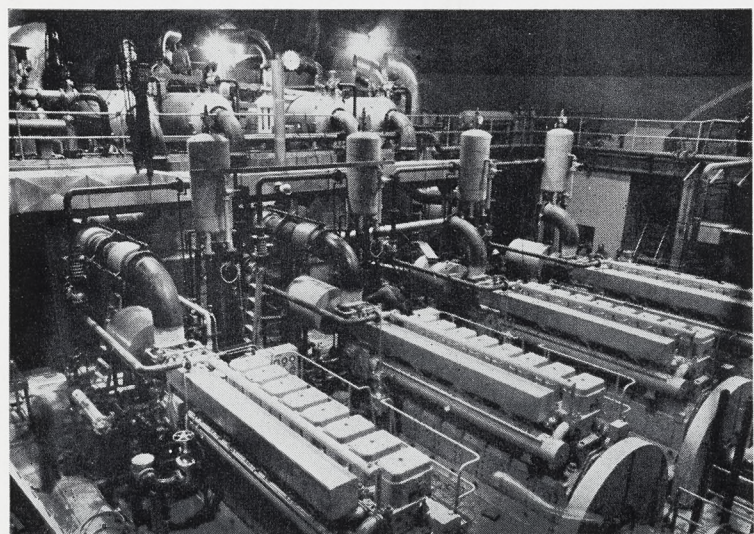


**MANAGEMENT CLUB**—It was a night for Norair wives on occasion of Management Club dinner dance at the Sheraton-Johnson Hotel. Attendance was a record 99 per cent. Management Club is always social focal point for Norcrafters far from home.

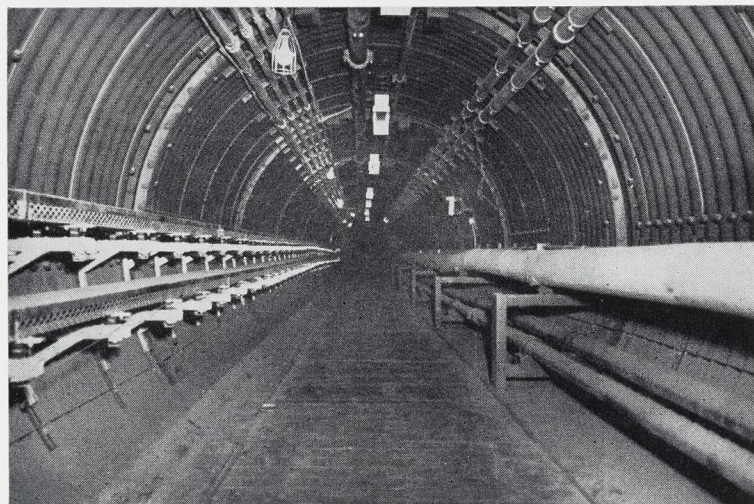




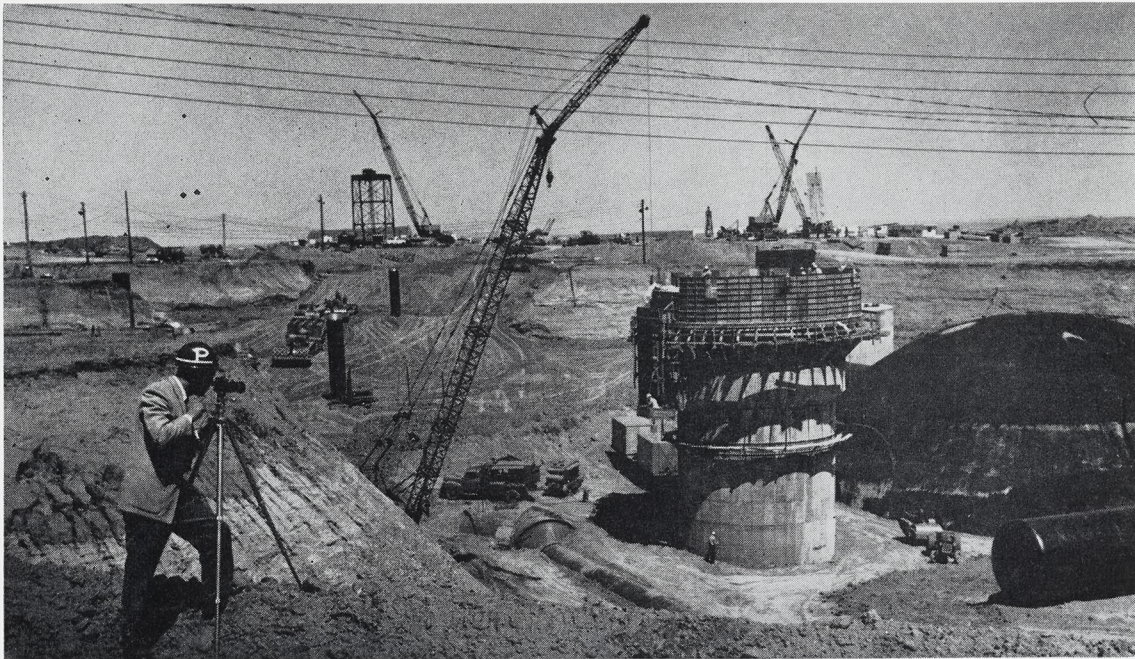
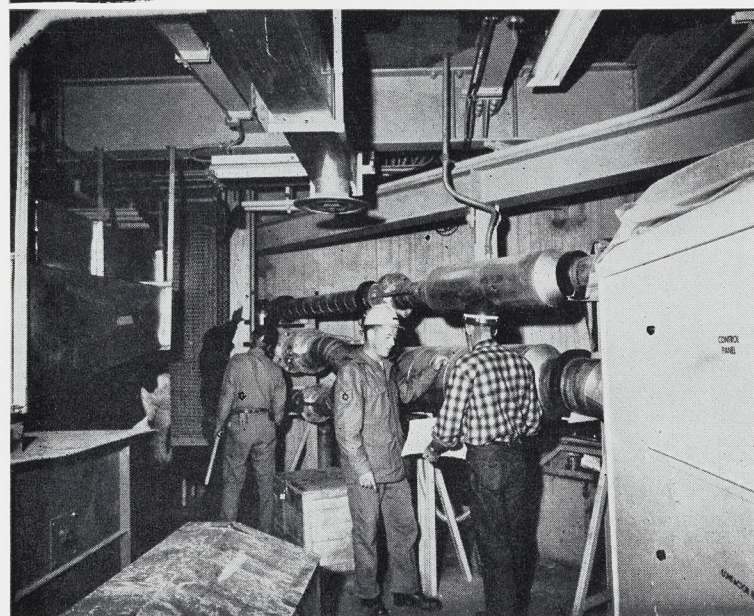
**THE BORE**—During early stages of the site, American Machine and Foundry men survey silo walls to establish points for cribbing installation. These holes were dug with bulldozers which went 'round and 'round and down and down through the prairie overburden and into the sandstone and shale. When depth was reached, dozers were lifted out with great cranes.



**POWERHOUSE**—Deep underground giant diesel engines work quietly to furnish power for all needs of the launch complex. Workman, far right, gives indication of size of these tremendous engines. The power generators may be seen lower right. During site activation and until SAC phase-in, powerhouse operation is a Norair responsibility.



**UNDERGROUND**—View of a tunnel leading from control center to missile silo at the site shows orderly engineering of facilities. Power cables are in trays at left. Floor is welded steel panels. Bolted sections of corrugated conduit hold back the pressure of the surrounding earth.



**ONE OF NORAIR'S RESPONSIBILITIES** during site construction was compilation of complete photographic record. Here Norair Reproduction and Photo Services Supervisor Dale Oliver shoots personnel portal in progress. Hard hats are an absolute requirement for all personnel. Photographers are distinguished by having the letter "P" emblazoned on theirs.

(Continued from Preceding Page)

Hawthorne, Holloman, the Cape, and Presque Isle. These long-time experienced folks have been augmented by highly trained people from St. Louis area, Kansas City, Chicago, Alabama, New York. Plus many South Dakotans who trained on the job, or were in industry "outside" and who came home to work on the project when it was known that SATAF had this job to do in their own prairie.

People moving from one part of America to another either remain strangers in their new homes, or they pick up the threads of community activity where they left off and continue to weave out the skein of life just as before.

#### NORCRAFTERS

Norcrafters are the weaver types, always have been. Give them a chance and they become vested. They'll buy homes in their new city, rather than rent. Their sons will play high school football, battling for first string just as they did a season ago at Washington or Leuzinger or Cocoa Beach Hi. The smaller fry will ride their bikes up and down the hills with the homegrown kids.

The ladies go to the store to buy groceries just as they did at home. Papa bowls, joins the Lions, the Masons, goes hunting. The entire family joins the church of their training.

They buy gas, go ice skating, shoot pool, play golf, open bank accounts, buy cars, go see the sights, go out for dinner, talk about the weather, take pictures, have birthday parties, get married, go to the show, go to the dentist, watch TV, learn the tricks of local traffic, buy Christmas presents.

The manager of the Chamber of Commerce Larry Owen said, "The 100 square mile section around Rapid City what we call the 'seven-county area' is growth area. Every 10-year period since 1900 we have grown. Just about doubled each time. In 1900 there were 1342 people here. In 1960 we counted 42,399.

**SAC MAN IN TRAINING**—Deep in the complex communications tunnel SAC man Tech Sergeant Richard Fallon, 850th SMS and The Martin Company's Dennis Bayard, Quality Control, buy out ducting installation per print. Sergeant Fallon and other SAC troops, who will take over when the contractor's jobs are finished, must know the purpose and function of every square inch of the facility. Contractor workmen in background are preparing to install electronic conduit. Note air conditioning vent immediately overhead.

"Our biggest revenue is from tourists. Certainly. Visitors attracted to Mt. Rushmore and the surrounding country bring us \$70 to \$80 million each year. Next comes the business of wholesaling. You know we are the biggest center this side of Minneapolis. Wholesaling brings us \$41 million a year. Farm sales amount to \$25 million a year. We have natural resources, gold, oil, uranium, mica, lumber, iron ore, and significant beryllium. We have cement plants, milling companies, and meat packing.

"One of the newest industries is mobile homes.

"The military business—Before the heavy missile work, the military yearly expenditure here was \$25 million. After the Titan sites are complete, it will stay near that figure, \$25—\$30 million a year.

"Rapid City has an important role in the project. We want you to like it here, lead normal lives. We do our best to make you a real part of things.

"Your response to our hospitality has been most gratifying.

"Norcrafters? Northrop people? I would say that they are assimilated, a fixed part of our community life, as much as or more so than those of any other contractor force."

#### FOR AID, \$2000

The First National Bank of the Black Hills is a fine building. It is modern. It is stunningly furnished in coal black slate from South Dakota quarries.

Bill Monger, 20-year plus Norcrafter and chief of Finance on the Titan T-2 project was to give Rapid City civic leaders R. E. Furois, ("Call me Furious") AID campaign chairman; and Leland Beecraft, executive director, Rapid City United Community Council an AID check for \$2000. This was money Rapid City Norcrafters had contributed by payroll deduction. It was a goodly sum and the first check the Rapid City fund had received in their current drive.

Said Mr. Furois, "We didn't

make our quota last year. This year we will make it. We will certainly make it. We will go over the top. This \$2000 check from Norair AID is a fine start."

"And there is more coming," said Bill Monger. "About \$2100 more. Rapid City Norcrafters show the highest percentage of AID participation of any organization in the Corporation. Would you please put this in the story? We are very proud."

There was the picture taking session in the Bank's board of directors room. H. P. Dixon, assistant vice-president in charge of Business Development and Public Relations, was there to help. In comparing notes, it was found that he had friends at Norair through in-law relationship. Dot Wood, Norair courier, is a chum of his wife's sister.

The manager of one of Rapid City's Safeway Stores, Verne Clark had also proved a close relationship with Norair. His father worked in Tooling during the war years and Verne is a Leuzinger graduate. The Clark's were Rapid City folk and returned there after the shooting was over.

This was Friday and the hustle of the assignment was over.

The AID check ceremony was the last duty.

Outside, the weather had changed. The sun was pale. There was a grey light on the hills just out of town.

The streets of Rapid City were white.

In the hotel lobby someone said, "The football game has been called off, too much snow."

That night the temperature dropped to 26. It had stood at 80 that morning.

We left the hotel in the frosty dawn. Out through the town and into the plain again. A pheasant flew across the road in front of the airport bus.

"Look at that pheasant," said the driver. The passengers took notice but said nothing. It was too cold and too early for conversation.

At the airport the Denver airplane was ready. Homeward bound.

On the way back we were treated to something unusual for air travelers. An exchange stewardess from the Honolulu Airlines played a ukelele and sang island songs for the tired technicians, military types and the corporate journalists aboard.

We were in Los Angeles by noon.



## City and Community



**UNITED COMMUNITY COUNCIL**—First on the dotted line. Bill Monger, Norair chief, Finance T-2 site, presents check in the amount of \$2000 to Rapid City United Community Council. Center is Leland Beecraft, executive director of the Council, and R. E. Furois, campaign chairman. Norcrafter check was first to be received in the campaign. They show highest participant percentage of all Northrop corporate organizations.



**AFTERNOON CONVENTION** — Neighborhood small fry gather together after school for the most fun in the world, riding your bike just any where. From left, a mixture of Rapid City and Norcrafter children are Diana Allen, Michael Oliver, Mark Allen, Sydney Anderson, Ronnie Lundberg, Kenney and David Musser, and Donnie Lundberg.

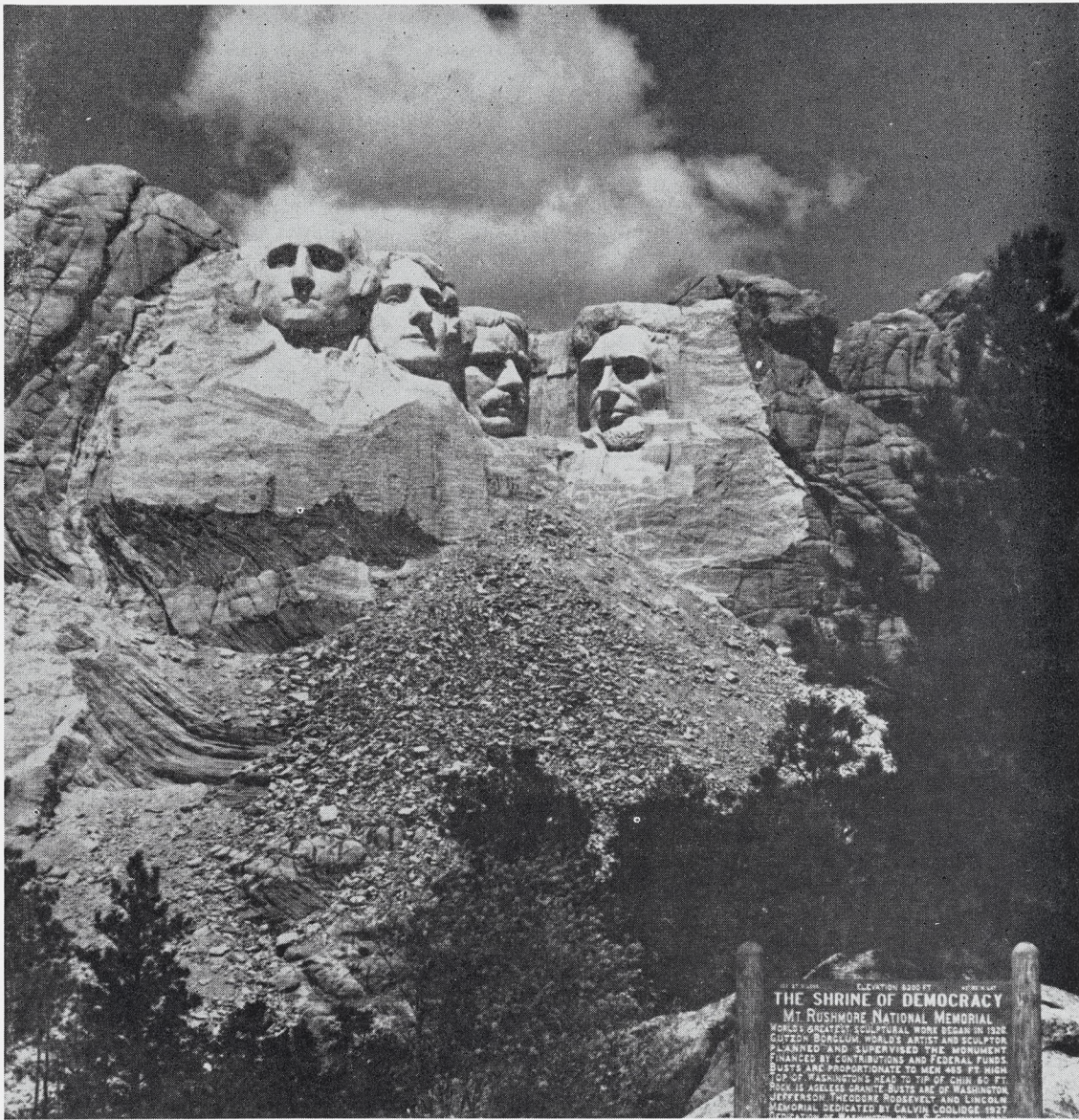


**FOOTBALL**—Football career of young Jay McBride, 6' 1", 185 pounds, who battled to first string guard on Rapid City Hi team, is uninterrupted by the family move to Rapid City. His dad, Ken McBride, Norair chief, Quality Control, and Coach Howard Naasz discuss prospects of the season. Game that week was called off due to untimely snowstorm. Jay is 17 years old.



**ICE FISHING**—Rapid City Norcrafter Ken Yost and Herb Conzen, systems engineer, Norair Administrative Services, try their hand at the newly experienced sport of fishing through a hole in the ice on Sheridan Lake. Ken drills the hole while Herb stands guard with a sharp ax! Note transportation vehicle in foreground.

**A VIEW OF THE CITY**—This photo shows portion of the city backed by the prairie on every hand. South Dakota is the country of the big sky. On this day there were clouds that gave with four separate light showers. The next day it was clear and warm. Two days later, snow. Twenty-six above.



**SHRINE OF DEMOCRACY** — Mt. Rushmore Memorial carved in the bold face of a granite cliff is mecca for tourists from all over the world. Sculpture of Presidents Washington, Jefferson, Roosevelt, and Lincoln in stone by Gutzon Borglum took more than 14 years. Borglum died before the work was completed. His son, Lincoln, then continued the work as long as finances permitted. The work on Roosevelt's face was never completely finished. The Memorial cost nearly a million dollars.

**SHOPPING TOUR** — Norcrafter wife, Mrs. Don Sherman, shops for the family at a Rapid City Safeway. Proud of his display of fine food and tempting produce is Manager Verne Clark, a Rapid City boy with Norcrafter home-ties. His father worked in the Jig Department during World War II. Verne graduated from Leuzinger Hi.



**A COMMUNITY SCENE**—Opening a bank account is Ed Sellinger, organization head, Budgets and Reports, at the First National Bank of the Black Hills. Teller is Kathy Waltman. At right is H. P. Dixon, assistant vice-president in charge of Business Development and Public Relations.







HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, RAPID CITY, EL PASO

## NEWS BRIEFS

**MATERIEL MECHANIZATION**—The Organizational Task Force has approved the mechanization of many of Materiel's routine functions, it has been announced by Jack Mannion, chairman. Operations Vice-president and Division Assistant General Manager Bob Lloyd, has asked that Phase 2 detail system design begin immediately. The proposal covering this portion of IMS was prepared by a team composed of Ray Turrell and George Pond, Materiel; Norvell Humphreys and Isadore Bailey, Computing and Data Processing; Roger Ragland, Finance; and Chairman Don Johnstone, Administrative Services.

**T-38**—The Air Force has designated the T-38 Talon twin-engine jet trainer as the first supersonic aircraft to complete flight testing without a major accident . . . A spokesman for Major General Perry B. Griffith, deputy inspector general for Safety, Norton Air Force Base, said the T-38 Talon has flown more than 9000 hours without an accident severe enough to destroy even a major system such as the landing gear of the plane . . . The T-38 is the sister of the N-156 fighter jet . . . The first flight was made in April 1959 at Edwards Air Force Base. The 100th Talon has now rolled out flight door at Palmdale.

**WSPACS**—The next meeting of WSPACS (Weapons System Programming and Control System) Policy group has been scheduled for the end of January by Major General W. Austin Davis in Dayton. Lee Ohlinger, director, Computing and Data Processing Center and coordinator of the aircraft industry's technical development of WSPACS program, will represent five other industrial participants; Boeing, Convair, Douglas, Lockheed, and North American. He will make the technical presentation to the assembled policy members, and explain the proposed method of testing the validity of the proposed WSPACS program that will improve scientific management capabilities of the Air Force in handling its huge complex of Weapons System programs.

## Norair Will Again Host A-F Industry Symposium

Norair will again sponsor the Air Force Education with Industry Symposium, it has been announced by Corporate Vice-president and Norair General Manager Dick Nolan.

The success of last year's meeting here, the first to be staged, resulted in the Air Force decision to make the symposium a formal yearly affair.

Twelve aerospace companies will take turns as host.

The meeting at Norair this

year will be the first to be staged under the formal program. It will be called the First Annual Planning and Procurement, Education with Industry Symposium. The date has been tentatively set as April 11 and 12.

Meeting coordination and arrangements will again be handled by Customer Service section, Frank Mathes, director.

Last year nearly 40 officers from the Air Force Air Univer-

(Continued on Page 4)

## Page Communications Gets Voice of America Contract

Page Communications Engineers has been awarded a \$7,373,000 contract for the construction of the Voice of America's powerful new mid-African relay station to be located near Monrovia, Liberia. Receipt of the contract award was announced by Joseph A. Waldschmitt, Page president and chief executive officer.

The Voice of America is the radio arm of the United States Information Agency, which tells America's story abroad. The new Liberian station, which is scheduled to go on the air in August, 1963, will pick up Voice of America broadcasts beamed from the U.S., and rebroadcast them to Africa and parts of Central

Europe and the Middle East on six 250,000-watt and two 50,000-watt transmitters. The total cost of the new facility is estimated at \$13,867,000.

The contract awarded to Page includes construction of buildings, installation of equipment, erection of antennas, and building of transmission lines. Clearing of the site is now being completed.

Page, which specializes in the design, construction, and installation of advanced communications systems throughout the world, participated in the design and building of the Voice of America stations in Tangier, North Africa, Okinawa, and the Philippine Islands.

## EXPANSION BRINGS RECORD NUMBER OF PROMOTIONS

High rate of Company progress plus the calling of many top management and technical men to key positions in the new Northrop Space Laboratories, the Corporate office and at Radioplane, has brought about a record

number of promotions and new assignments for Norair Division.

The magnitude of expansion during 1961, now continuing into 1962 and which surpasses that of another period in Company

tively.

Immediately upon return to work, Mr. Lloyd and Mr. Gasich issued promotion assignments in the manager and director level.

Mr. Lloyd announced that Jack Mannion, formerly assistant to the general manager, was appointed manager, Manufacturing department.

Former Division Controller R. M. McNamara, was appointed manager of the Contracts and Service department.

Continuing in the Operations area, Mr. Mannion has selected G. A. Schnug, formerly director, Program Planning section as assistant to the manager of the Manufacturing department.

W. A. Whitman, formerly chief, Hours Planning group, was assigned director of the Manufacturing Program Planning section.

C. Goodman-Malamuth was

(Continued on Page 4)

### BIOGRAPHIES

Biographies and photographs on the new promotions will be found on Pages 2, 3.

history has set in motion a chain reaction of personnel upgrading.

An announcement by Corporate Vice-president and Norair General Manager Dick Nolan shortly before the holiday advised that F. W. "Bob" Lloyd and W. E. Gasich had been appointed to assistant managerships with jurisdiction over the newly created Division segments, Operations and Technical, respec-

## John Alison Appointed Corporate V-P

John R. Alison, formerly Norair vice-president of Marketing has now been promoted to Corporate vice-president, Customer Relations, it has been announced by Thomas V. Jones, president.

Mr. Alison, a Norcrafter since 1953, first joined the Company as vice-president, Administration. He served in that function until 1955 when he was appointed



JOHN R. ALISON

vice-president, Marketing. He has served in this capacity until accepting his corporate assignment.

A native of Gainesville, Florida, Mr. Alison served with distinction as a fighter pilot during

(Continued on Page 4)

## Horner Announces New Space Lab Appointments

Paralleling Norair major promotions and reassignments, Richard E. Horner, Corporate senior vice-president, Technical and vice-president and general manager, Northrop Space Laboratories, has announced that Dr. Ludwig Roth has been appointed vice-president and manager of Systems Engineering department for this new Corporate element.

Dr. Roth was former Norair director, Research section.

Dr. V. W. Howard, formerly Radioplane director of Research was appointed vice-president and manager, Research department.

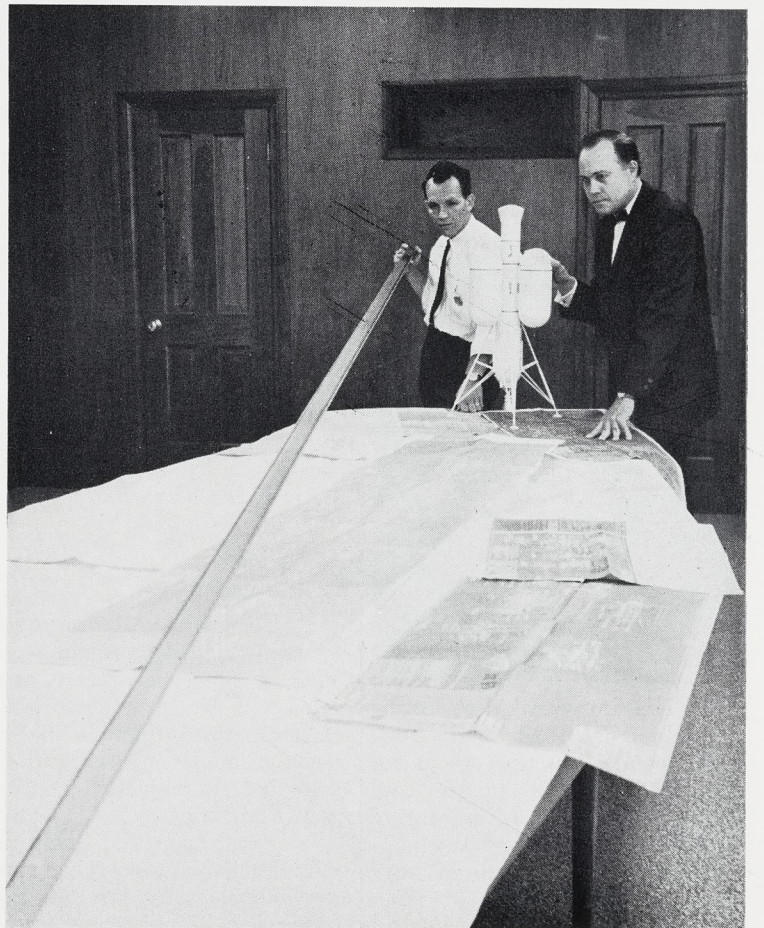
Alan C. Morgan, formerly Norair vice-president, Contracts and Service, has been made vice-president and manager, Business Administration department.

George Mangurian, formerly Norair director, Technical section, was made manager, Applications Engineering and Planning department.

## Space Progress

### BERYLLIUM BREAK-THROUGH

Company breakthrough in beryllium extrusion process, achieved with technical assistance of Nuclear Metals, Inc., of Concord, Massachusetts, now allows manufacture of channels 39 feet long. This is three times length heretofore possible. Ken Kuschell, group leader, Norair Material Sciences; and N. V. Petersen, chief, Astro Sciences, Northrop Space Labs, study application factors to ORBS launch platform. Research to breakthrough was done under contract with Air Force Aeronautical Systems Division.





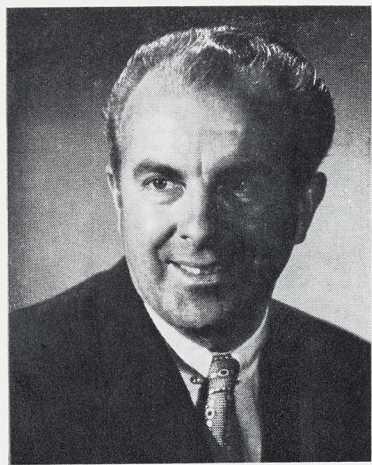
# Training and Experience Mark Careers of Promoted Norcrafters

## BIOGRAPHIES REVEAL SPECIAL TALENTS

Jack Mannion, formerly assistant to the Division general manager, has been appointed manager, Norair Manufacturing.

He has been a Norcrafter since 1940, and has had wide experience in the aircraft industry in manufacturing, quality control, and communications and management activities.

He has served Norair as chief



inspector, and assistant director of Quality Control, in addition to the position of assistant to the general manager.

Mr. Mannion received his technical training from the Boeing School of Aeronautics in aircraft design and construction, and his management training from UCLA, where he attended the School of Business Administration and specialized in the field of modern management methods.

He has assisted Norair Division general management in obtaining the modern and forward streamlined organization with advanced management practices and comprehensive cost control methods, which have earned the Division its solid reputation as a well managed, low cost producer.

Mr. Mannion has been active in the American Management Association, Statistical Quality Control Society, various SAE panels, and Aerospace Industries Association committees in the development and advancement of quality control and management techniques.

★ ★ ★

Milt Kuska, deputy assistant general manager, Technical, is a seven-year Norcrafter, coming to this Company in 1953 from North American Aviation where he was a flight test project engi-



neer. His first position at Norair was chief of Missile Field Test. Subsequently, he was promoted to chief flight test engineer and then to director, Engineering Flight and Laboratory Test.

He was promoted to his new assignment from that of manager, Laminar Flow Control

Technological Airplane Project department.

In his 17 years of aerospace experience, Mr. Kuska has contributed significantly to the development of many airplanes including the SB2C dive bomber, F-86A fighter, F-86D interceptor, and the F-100 supersonic fighter, in addition to his work here at Norair.

His work as a Norcrafter has covered all aspects of the Snark development flight test program, including management of the Northrop Missile Test Facility at the Air Force Missile Test Center, Cape Canaveral, Florida.

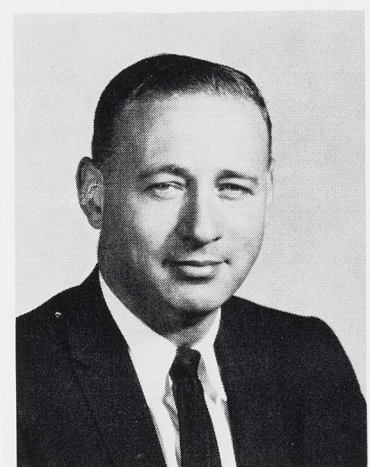
He has directed all Norair phases of T-38 and N-156 flight test work, programs that have established enviable records for meeting and exceeding test commitments and establishing a reputation for all around good project management.

Mr. Kuska received his Bachelor of Science degree in Mechanical Engineering from the University of Nebraska in 1942.

★ ★ ★

C. R. "Bob" Gates, formerly assistant manager, Marketing, now promoted to Marketing manager, has been a Norcrafter since 1955.

Mr. Gates came to Norair direct from Headquarters USAF where for three years he had served as Aeronautical Power Plant research engineer. Prior to that he was an aerodynamicist at Convair-Fort Worth, and did research work at Cornell Aero-



nautical Laboratories, Buffalo, New York.

Mr. Gates was educated at the University of Oklahoma where he received his B.S. in mechanical engineering, and at Massachusetts Institute of Technology where he was awarded his master's in Aeronautical engineering.

He served in the United States Navy during World War II.

Mr. Gates is the author of many technical and research articles which have been published in Air Force Magazine.

★ ★ ★

G. A. Schnug has been appointed assistant to the manager, Manufacturing department.

Mr. Schnug has been associated with Northrop since 1957. His assignments include that of executive advisor; chief and director of Manufacturing Program Planning.

Prior to Northrop, he held the positions of Manufacturing manager for Kaiser Aircraft and Electronics, Richmond; director,

Master Programming, Piaseki Helicopter Corporation; and general supervisor, Cost Estimating and Master Scheduling, Convair, Fort Worth.

Mr. Schnug was educated at



the University of Wichita where he received his A.B. degree in 1939. The following year 1939 to 1940, he did graduate work at the University of Chicago.

★ ★ ★

R. M. McNamara, former Norair Division controller, has been designated manager, Contracts and Service Department.

Mr. McNamara has been a Norcrafter for over 20 years, having joined the Company in 1940.

He has held many key positions in the Company including assistant to the vice-president of Manufacturing, Norair; manager of Administration and manager, Accounting and Finance, Anaheim; chief, Cost Accounting;



and executive assistant to the controller, Norair.

Mr. McNamara is a graduate of the University of California at Berkeley, class of 1939. He holds a bachelor's degree in psychology.

He is a member of the National Association of Accountants.

★ ★ ★

T. L. McCarthy, former director, Master Programs and Analysis, has been appointed manager, Administration Department.

Mr. McCarthy is a ten-year Norcrafter. He has served in the positions of general supervisor and chief, Operations Analysis; manager, Manufacturing Subcontract programs; and assistant director, Master Planning.

Prior to his association with Northrop, Mr. McCarthy held managerial positions with Chance Vought where he was assistant chief of Engineering and acting manager of Flight; at Fairchild where he served on the assistant general manager's staff; at North

American Aviation where he was Estimating general supervisor, Contract Administration.

Mr. McCarthy was educated at Birmingham Southern College



and at Southern Methodist University where he majored in physics, mathematics and economics.

He has published numerous papers covering such subjects as reduced lead time, managing for productivity, and product value management.

★ ★ ★

A. M. Ogness has been made manager, Research and Development department.

He is a nine-year Norcrafter. His most recent positions being general supervisor, Preliminary Design and chief, Advanced Mis-



sile Systems group in the Advanced Systems section.

Prior to joining Northrop, Mr. Ogness held key engineering positions with Douglas Aircraft, El Segundo Division, where he was a design specialist and structures engineer. He was also assistant professor in Aeronautical Engineering at the University of Illinois.

He was educated at the University of Illinois and at the University of Michigan. He received his B.S. in 1943.

He holds airplane design patents on the T-38 Talon and the N-156 fighter.

He is author of "A Specific Technique for the Application of Castigliano's Theorem to the Solution of Complex Redundant Structures."

★ ★ ★

W. E. "Woody" Woolwine has been designated manager, T-38/N-156 Program department.

Mr. Woolwine is a 12-year Norcrafter. He has held the positions of assistant chief of Structures; chief of Airframe Design; deputy assistant chief engineer, Projects and Components; director, Design Engineering; and director, Engineering Project Management.

Before coming to Northrop, Mr. Woolwine held engineering positions with The Martin Company including group engineer, project structures engineer, and design specialist.

He was educated at Virginia Polytechnic Institute, and at

Georgia Institute of Technology where he received his B.S. in Aeronautical Engineering.

Mr. Woolwine is a graduate of the Executive Program, UCLA.



His association activities include chairmanship, Structures section, Missiles and Astronautics Division, American Ordnance Association; associate fellow, Institute of Aeronautical Sciences; and membership in the American Rocket Society.

★ ★ ★

Frank Mathes has been made director of the Customer Service section.

Mr. Mathes first came to the Company in 1944 as an electrical inspector on the P-61 night fighter. He has held the positions of chief, Customer Field Service; chief, Field Service and Training; and chief, Field Support.

He became identified with the aerospace industry in 1939 when he was associated with Lockheed as experimental inspector.

He has received a patent on an aircraft balance indicator.

During Mr. Mathes' Norair career he has contributed significantly to product performance on the P-61 Black Widow, F-89 Scorpion, the Snark missile, and the T-38 Talon. His work has helped achieve for Norair its outstanding record of airplane ready rate and high degree of flight safety, both which have estab-



lished new records and standards for the industry.

He was also instrumental in accomplishing the Snark site activation program at Presque Isle ahead of schedule and under budget.

He performed key responsibilities in last year's Norair-sponsored symposium for the Air Force Institute of Technology Education with Industry participants. The Air Force has asked Norair to restage this event this year.

Mr. Mathes' hometown is Algona, Iowa.

His favorite hobbies are bridge and athletics.

★ ★ ★

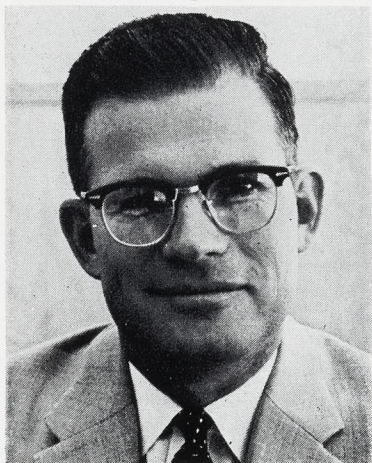
D. D. Warner, formerly director, Laminar Flow Control Engineering has been promoted to the position of manager, LFC Airplane Demonstration Program

(Continued on Next Page)



(Cont. from preceding Page) department.

Mr. Warner is an 11-year Norcrafter. He has held the positions of supervisor, Structures group, Snark Missile; supervisor, Structures group, Advanced Design; assistant project engineer, Long Range Interceptor project; engineering chief of Structures and Mechanical Design; and director, LFC Engineering.



Prior to Northrop, Mr. Warner held positions at The Martin Company as senior stress analyst; North American Aviation as engineering assistant supervisor.

He was educated at the University of Minnesota where he majored in Aeronautical Engineering receiving his B.S. in 1940.

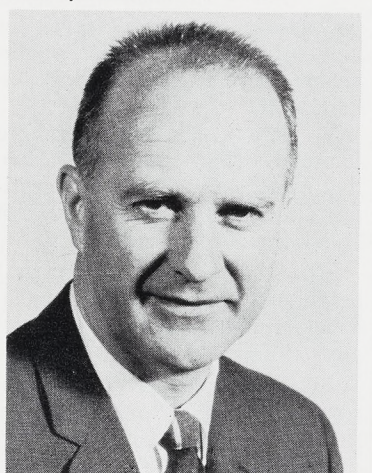
★ ★ ★

W. E. Fellers has been named director of Long Range Planning.

Mr. Fellers is an eight-year Norcrafter. He first came to the Company in the position of staff engineer and later was made technical assistant to the vice-president, Engineering, the position held when he received his new appointment.

Prior to joining Northrop, Mr. Fellers held positions as staff engineer with Fletcher Aviation, Pasadena, and assistant chief of Aerodynamics at North American Aviation.

He was educated at the College of the Pacific where he majored in engineering. He received his A.B. degree in 1940. He continued his studies at the California Institute of Technology in Aerodynamics until 1942.



Mr. Fellers' work at North American resulted in patents granted for the seven-foot trisonic wind tunnel and a throttling valve for large supersonic wind tunnels.

He has also engaged in racing airplane design.

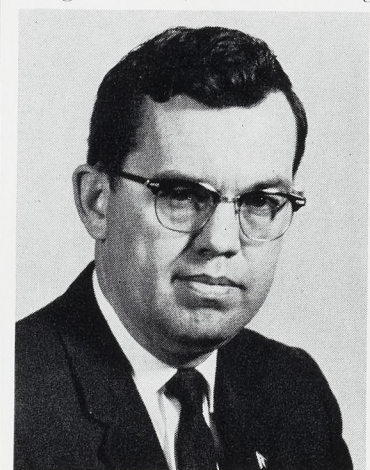
His hometown is Sebastopol, California.

★ ★ ★

W. A. Whitman has been named director, Manufacturing Program Planning.

Mr. Whitman has been with Northrop 11 years. He first came to this Company as statistician and was later promoted to the assignment of chief, Manufactur-

ing Hours Planning, the position held when he received his new appointment. He has been responsible for preparation of program plans, master schedules, change control, Manufacturing



labor budgets and performance report systems.

He was educated at UCLA in mathematics being awarded his B.S. degree in 1950.

★ ★ ★

C. Goodman-Malamuth has been appointed chief, Manufacturing Hours Planning group.

Mr. Goodman-Malamuth is a four-year Norcrafter. Since coming to the Company he has served continuously in Manufacturing Program Planning as de-



partmental assistant, Manufacturing analyst and Manufacturing forecaster.

Prior to joining Norair, he held positions at the University of California, Berkeley, where he was research assistant and at Prudential Insurance where he was travel and conference representative. Prior to this, he was a linguist for the U.S. Air Force.

Mr. Goodman-Malamuth was educated at the Syracuse University in political economics where he received his B.A. in 1952. In 1956 he received his master's at the University of Southern California. He also did post-graduate work at the University of California, Berkeley.

★ ★ ★

Dr. Werner Pfenninger, chief, Boundary Layer Research has been made director of that section.

Dr. Pfenninger is a 12-year Norcrafter. He came to this Company from his native Switzerland to conduct research in boundary layer control. His studies through the years have resulted in marked success and now the principles are being applied to aircraft under Air Force research contract.

Dr. Pfenninger has had many years of experience in the aerospace sciences.

He received his degree in Mechanical Engineering from the Swiss Federal Institute of Technology in 1936, and his Ph.D. in Aeronautical Engineering from the Zurich Institute of Aerodynamics in 1946.

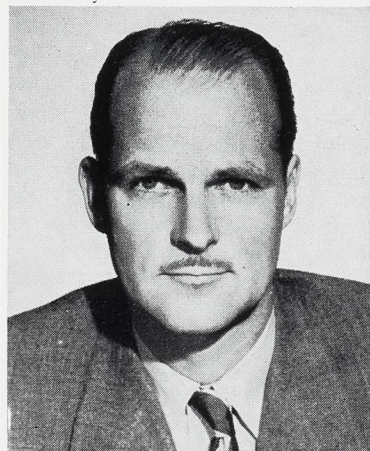
From 1937 to 1946, he conducted boundary layer control

## Aerospace Know-How Key To Space Lab Assignments

Alan C. "Al" Morgan, formerly Norair vice-president, Contracts and Service, has been named vice-president and manager, Business Administration department, Northrop Space Laboratories.

Mr. Morgan is a longtime (21 year) Norcrafter having joined the Company shortly after founding—April 1940.

His first assignment was in Production Control. Subsequently, he held the positions of contract administrator; assistant director, Sales; and director, Customer Relations and assistant secretary.



Mr. Morgan has been identified with the industry since barnstorming days. His activities (experiences) include personal pilot for movie star Wallace Beery; student instructor pilot in the days of the OX5 Jennies at Rogers Airport, present location is Western Avenue Golf Course; airline pilot for Transcontinental Air Transport and Century Pa-

research at the Zurich Institute for Aerodynamics. He served as an aerodynamicist and designer of fighter aircraft for F.F.A. Altenrhein and Sulzer Brothers in Switzerland from 1947 to 1949.

Dr. Pfenninger holds several patents in the field of low drag boundary layer control. He is a member of the Institute of Aeronautical Sciences and the Society for Applied Mathematics and Mechanics.

Many articles on low drag boundary layer control, written by Dr. Pfenninger, have been published in American and European magazines.

Dr. Pfenninger was especially



distinguished recently when he appeared before the Tenth International Congress of Fluid Mechanics in Stressa, Italy. He there delivered the paper "About the Development of Swept Wing Laminar Suction Wing with Full Chord Laminar Flow." His collaborator in this study was Norair BLC Technical Specialist J. W. Bacon, jr.

cific.

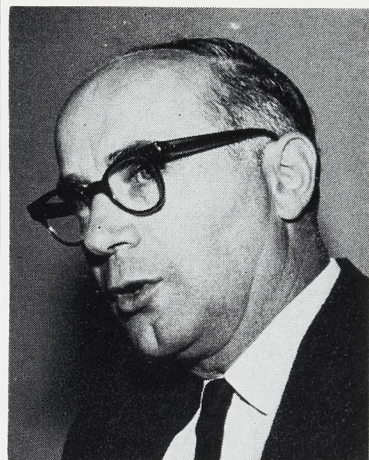
Mr. Morgan was educated at UCLA, then University of California, Southern Branch. The college at that time was located on Vermont Avenue.

He was a member of the 1932 Olympics team where he was awarded a gold medal on the 8 Meter Yachting team.

★ ★ ★

Dr. Ludwig Roth, formerly Norair director, Research, has been appointed vice-president and manager, Systems Engineering department, Northrop Space Laboratories.

A famous aerospace scientist and long a member of the Army Redstone ballistic missile team of Dr. Wernher Von Braun, Dr. Roth has been identified with design and development of advanced aircraft, rocket, and mis-



sile systems in his native Germany and in the United States since 1926. His primary education was received in Worms and Darmstadt. His advanced studies include a degree in mechanical engineering in 1930 and diplom engineer (M.S.) in aeronautical engineering in 1933. His majors were in aeronautics, thermodynamics and meteorology.

His studies and responsibilities for the German government, which included structural development and analysis of all aircraft design and construction by the German Research Institute for glider aircraft, lead to the creation of the ME-163. He was later—1939—placed in charge of all new project design for guided missiles in Peenemuende and also chief of preliminary design at this birthplace of the German V2 rocket.

Subsequent to the war, he came to the United States and became associated with Army Ordnance as chief, Preliminary Design, Sub-office Rockets, Fort Bliss, Texas. At this place and later at Redstone he was in charge of preliminary design, structural and mechanical development and aerodynamical research for Hermes II and Redstone weapon systems.

★ ★ ★

Dr. V. W. Howard, director of Research, Radioplane Division, has been appointed vice-president and manager, Research department, Northrop Space Laboratories.

Dr. Howard first became associated with Northrop-Radioplane in 1956 in the position of chief, Systems Analysis group. He was subsequently director of Advanced Systems Engineering; then director, Advanced Systems Research and Development; and

manager, Radioplane Engineering department.

He has held numerous high level scientific positions in aerospace work which include research engineer and mechanical engineering instructor at Brown University; systems engineer at Massachusetts Institute of Technology Flight Control Laboratory where he was responsible in the Meteor missile flight planning and data analysis. He also assisted in the instrumentation of the MIT blow-down wind tunnel



and served as a representative on the U.S. Navy Bureau of Ordnance Committee on Aero-ballistics.

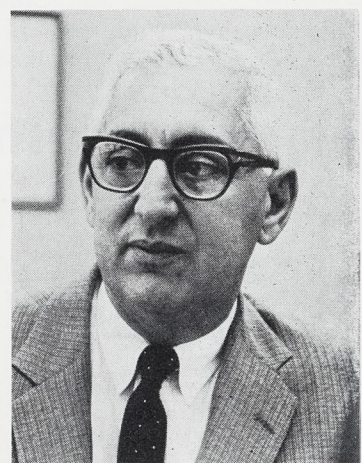
Dr. Howard was educated at Brown University where he received his ScM.M.E.; and at Massachusetts Institute of Technology where he was granted his science doctorate.

Dr. Howard is a member of the Northrop Corporate Technical Council.

★ ★ ★

George Mangurian, former director, Engineering Technical section, has been appointed manager, Applications Engineering and Planning department for the Northrop Space Laboratories.

Mr. Mangurian joined Northrop in 1950. He has held the positions of chief, Structures; chief,



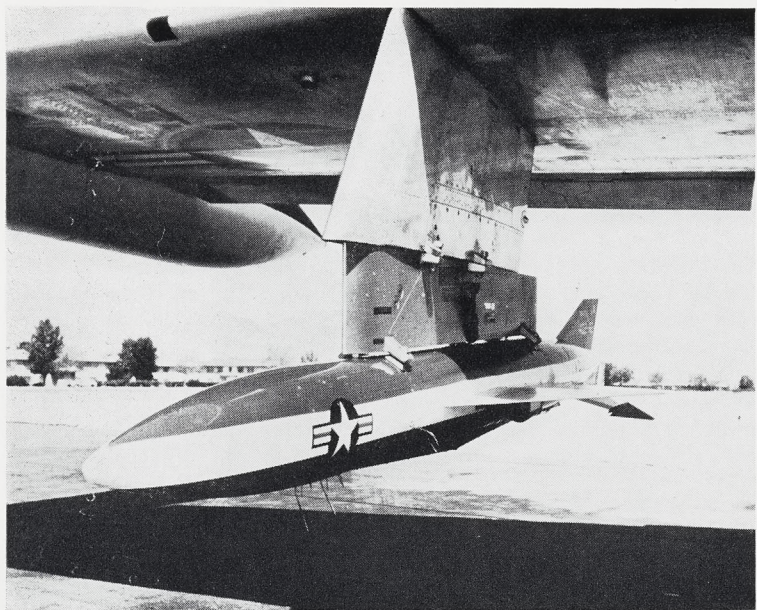
and later director, Analytical Engineering.

Prior to coming to Northrop, he was with Chance Vought Aircraft as assistant chief, Engineering Structures, and with The Martin Company as technical assistant to chief, Structural; and supervisor of Structural Projects.

Mr. Mangurian was educated at the Massachusetts Institute of Technology where he majored in civil engineering. He received his master's in Engineering in 1929.

His membership activities include NASA Research Advisory Committee on Aircraft Structures; IAS Panel on Structures and Materials; American Rocket Society, and NACA Subcommittee on Aircraft Structures.





**CARRIED ALOFT AND LAUNCHED**—at altitude, this Radioplane RP-76-4 rocket-powered target missile attained a speed in excess of Mach 2 at an altitude of 65,500 feet during test at White Sands Missile Range, New Mexico. The record 8-1/2 minute flight was accomplished during a flight evaluation program carried out under the auspices of the U.S. Army Rocket and Guided Missile Agency, Redstone Arsenal, Huntsville, Alabama. Radio-controlled RP-76-4 test vehicle is suitable as a high-altitude, high-speed training target for surface-to-air missiles.

## WSPACS Award



**AWARD FROM AEROSPACE MANAGEMENT** — Lee Ohlinger, Norair's director of Computing and Data Processing, accepts an author award from J. Philip Geddes, western technical editor for Aerospace Management magazine. The plaque was given in recognition for an Ohlinger-written article in the November 1961 issue of the magazine. Titled "A New Scientific Management Technique," the article dealt with the joint Air Force and Industry WSPACS (Weapons System Programming and Control System) study that was designed to provide the Air Force with a new scientific management technique.

## Norair Promotions

(Continued from Page 1)

appointed chief of the Hours Planning group.

Mr. McNamara designated Frank Mathes, former chief, Product Support group as director, Customer Service section. C. D. Fuller, previously in charge of Customer Service, has moved to the Northrop Space Laboratories.

In Technical Mr. Gasich appointed Milt Kuska, formerly manager, Laminar Flow Control Technological Airplane Project, to deputy assistant general manager, Technical. Mr. Kuska will also act temporarily as manager of the Technical Operations department.

A. M. Ogness was made manager of the Research and Development department. He was formerly chief of Advanced Missile Systems.

D. D. Warner, formerly director, LFC Engineering, was made manager, LFC Airplane Demonstration Program department.

W. E. Woolwine, former director, Project Management was assigned as manager, T-38/N-156

Program department.

C. R. Gates, formerly assistant manager, Marketing, was appointed manager of that department.

Dr. Werner Pfenninger, former chief, was made director of the Boundary Layer Research section.

Mr. Nolan made additional appointments in assigning T. L. McCarthy as manager of the Administration department, the position which was formerly held by Mr. Mannion. Mr. Nolan also appointed W. E. Fellers director of the newly created Long Range Planning. Mr. Fellers was formerly technical assistant to the Engineering vice-president.

Mr. McCarthy has announced that L. W. Finley will supervise activities within the Master Programs and Analysis section.

**Buy Bonds**

## John Alison

(Continued from Page 1)

World War II and is an officially rated ace with seven enemy aircraft destroyed.

Mr. Alison's activities during the war included squadron commander under General Chenault in China; assistant military attache, United Kingdom and USSR; group commander, 367th Fighter group. He was also deputy chief of staff, Operations under General Ennis Whitehead.

He holds the U.S. Distinguished Service Cross, British Distinguished Service Order, U.S. Distinguished Flying Cross, Silver Star, Purple Heart, Legion of Merit and Air Medal.

Since the war, Mr. Alison has continued his military affiliation as Reserve officer and has advanced to the grade of major general, USAF Reserve.

Prior to joining Northrop, Mr. Alison was president of the Transit Van Corporation, Redwood City, California. He is a past director of Slick Airways; a current director of Arnoux Corporation and a member of the advisory board, Southwest Bank, Inglewood.

Mr. Alison is past president and past chairman of the board of the Air Force Association.

Mr. Alison was educated at the University of Florida where he received his Bachelor of Science degree in industrial engineering.

## Symposium

(Continued from Page 1)

sity Institute of Technology attended. They were given two days of high level briefings by Company officials on Norair and industry business methods plus detailed discussions on management techniques. The symposium concluded with production line and science lab tours with presentations by project leaders.

This year's meeting will be even more extensive. Concept has already been established. Detailed planning is now underway.

## CHARLEY EYRES ATTENDS IAS STUDENT MEET

Charles Eyres, staff assistant to the vice-president, Technical, by special invitation attended the initial meeting of the Institute of Aerospace Sciences Student Program Advisory meeting, it has been announced.

The meeting was held at the Massachusetts Institute of Technology at Cambridge, December 9 and 10.

The invitation was in part a salute by the IAS to Mr. Eyres for his years of outstanding service to education in science and engineering fields. He has served as chairman of the Western Subcommittee of the IAS Engineering Career Development Committee.

The MIT meeting served to evaluate the problems and objectives of the IAS student program.

Chairman was Dr. William R. Sears, a former Norcrafter, now head of the Department of Mechanical and Aeronautical Engineering and member of the board of directors, Cornell University.

Mr. Eyres' invitation was tendered by Dr. H. Guyford Stever, head, Astronautical and Aeronautical Departments, MIT and president of the IAS.



**HER VOICE**—The voice of Gina Drazin is recorded on the warning tapes used in Nortronics' VIPS to alert flight crews of possible in-flight trouble conditions.

## Gina Drazin's Voice Rides With A-F, Warns of Flight Problems

A dulcet female voice breaks the silence of a B-58 pilot's cockpit to announce, "Left manifold pressure low."

The tape-recorded message continues at intervals until either the pilot makes an adjustment or the situation corrects itself. The system supplements the airplane's existing light warning system, conveying the warning vocally instead of visually.

Purpose of the new system (VIPS), built by Nortronics Division which is slated for installa-

low," for example, before seeing the conventional warning light, he might save precious seconds in taking corrective action. Such seconds can be crucial when the plane is traveling supersonically.

Time required for the voice to "come on" after the system detects the trouble is about a half second.

VIPS works at any altitude. A "landing gear unsafe" voice warning, for instance, will come on if the pilot cuts his speed too low on landing, or if he's flying too fast after takeoff with landing gear down.

Nerve center of the VIPS which uses the same switches as the light warning system, is an electronic black box about 10 by 6 inches in size.

But who owns the dulcet voice? It is that of Gina Drazin, Nortronics secretary to Joe Ratigan, chief, Advanced Inertial Systems. Gina's husband Lou is a Marketing Norcrafter, Subcontracts.

## TWELVE RULES FOR RAISING DELINQUENT CHILDREN

(Northrop-Norair News thanks to Lee Ohlinger)

1. Begin with infancy to give the child everything he wants. In this way he will grow up to believe the world owes him a living.
2. When he picks up bad words, laugh at him. This will make him think he's cute. It will also encourage him to pick up "cuter" phrases that will blow off the top of your head later.
3. Never give him any spiritual training. Wait until he is 21 and then let him "decide for himself."
4. Avoid use of the word "wrong." It may develop a guilt complex. This will condition him to believe later, when he is arrested for stealing a car, that society is against him and he is being persecuted.
5. Pick up everything he leaves lying around — books, shoes, and clothes. Do everything for him so that he will be experienced in throwing all responsibility on others.
6. Let him read any printed matter he can get his hands on. Be careful that the silverware and drinking glasses are sterilized, but let his mind feast on garbage.
7. Quarrel frequently in the presence of your children. In this way they will not be too shocked when the home is broken up later.

8. Give a child all the spending money he wants. Never let him earn his own. Why should he have things as tough as you had them?
9. Satisfy his every craving for food, drink, and comfort. See that every sensual desire is gratified. Denial may lead to harmful frustration.
10. Take his part against neighbors, teachers, policemen. They are all prejudiced against your child.
11. When he gets into real trouble, apologize for yourself by saying, "I never could do anything for him."
12. Prepare for a life of grief. You will be likely to have it.

A reprint from "ECONOMIC INTELLIGENCE," August 1959, published by Chamber of Commerce of the United States.

**Northrop-Norair News**

VOL. 20 NO. 2

1001 E. Broadway, Hawthorne, Calif.  
A NORTHROP CORPORATION  
PUBLICATION

Published every other Wednesday  
NORAIR DIVISION

CHARLES BRADFORD, Editor

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## RIDES WANTED

7 a.m. — 3:45 p.m.

SLAUSON & WESTERN, Los Angeles. A. M. Robles, ext. 1750. AX 1-1449. 2  
WILLOW & LONG BEACH FWY., Lona Beach. Karen Schrover, ext. 1508, GA 4-8450. 2

7:30 a.m. — 4:15 p.m.

CABRILLO & CARSON, Torrance. Anne Stevenson, ext. 2063. FA 8-4663. 3  
BLANCHE OR FLOURNOY & 29TH ST., Manhattan Beach. Norman J. Golden, ext. 1973 or 543, FR 4-5173. 3

8 a.m. — 4:45 p.m.

LAMPSON & MAGNOLIA, Garden Grove. J. Bullock, ext. 518. LE 9-1375. 5  
NO. EASTWOOD AVE. & REGENT ST., Inglewood. W. D. Carmean, ext. 1766, OR 4-4183. 5  
CHERRY AVE. & CARSON ST., Lona Beach. R. Barbara, ext. 2123, GA 7-6097. 5  
ATLANTIC AVE. & SOUTH ST., Lona Beach. Robert H. Burner, ext. 2630, GA 2-5152. 5  
ALONDRA & SANTA ANA FRWY., La Mirada. Wes Williams, ext. 1559, LA 1-2073. 5

3:45 p.m. — 12:15 a.m.

PACIFIC & 4TH, San Pedro. Tamara L. Kavanouh, ext. 1912. TE 2-0265. 6  
YUKON & ARTESIA, Torrance. Betty Slack, ext. 1453, DA 7-9413. 6

## RIDES OFFERED

8 a.m. — 4:45 p.m.

ATLANTIC AVE. & SOUTH ST., Lona Beach. Robert H. Burner, ext. 2630, GA 2-5152. 15  
ALONDRA & SANTA ANA FRWY., La Mirada. Wes Williams, ext. 1559, LA 1-2073. 15  
ANZA & TORRANCE BLVD., Torrance. Mary Ann Cochrum, ext. 1446. 15

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

MERCURY, Montclair, good tires, \$550. NO 5-2046. A  
HOUSEHOLD FURNISHINGS, drapes, \$25; dishwasher, GE portable, \$25; bridge lamp w/ maple shelf, \$15. DA 3-4842. A  
BOAT JIG, 16' Cruzon inbd. or outbd., \$20. OX 6-5480. A  
RENAULT DAUPHINE, 1958, w/radio, \$450. GL 7-7432. A  
PEUGEOT, 1959, 4-dr. sedan, r/h, sun roof. \$950. JE 4-2401. A  
HOUSEHOLD FURNISHINGS, grand piano, provincial, \$450; range, Gaffers & Sattler, 1958, chrome top, \$90; refrigerator, Philco, 8 cu. ft., \$65; dining rm. set, Philippine mahogany, complete, \$165; bedroom set, blonde, \$65. OS 5-2853. A  
CHEVROLET, 1954, 4-dr., \$150. FR 5-0061. A  
CHEVROLET CLUB COUPE 1949, needs body work, good tires, radio, \$50. FR 4-7761. A  
DRAFTING TABLE, tilt-type, approx. 4' sa., \$18. DA 9-6039. A  
SOFA & CHAIR SET, wrought iron, brown tweed, \$35; bedroom set, solid ash, blonde, double bed w/bookcase headboard, 2 night stands, lae, dresser & mirror. \$85. TE 3-8903. A  
PIANO, upright, \$98. DA 7-9084. A  
OLDS 88, 1953, 4-dr., r/h, \$275; wheel chair, Everest & Jennings, adult-size, \$100; bicycle, boy's, Grand Prix De-Railleur, \$50; shoe skates, size 5 1/2, girl's, \$5. OS 6-3589. A  
SIMCA, station wagon, 1960, \$800 or take over payments. OS 9-7952. A  
OLDS F-85, deluxe wagon, 1961, luggage rack w/w, r/h, power steering, 6-mo-old. \$2500. PL 6-3245. A  
MORGAN 4/4, 1960, coupe, red, 23,000 miles. \$1100. GR 8-5396. A  
STEREO CAMERA, Kodak, w/110 volt Kodak viewer, camera case, \$55. FR 5-2920. A  
TRAIN LAYOUT, 4'x6', 2 turnouts, mountains, track is brass on wood, \$25; bicycle, 26", 6-spd. drop bars, aeread extra low, \$25; trailer, 2-wheel-type, 8x4 box, 36" rack, new tires. \$75. 371-6775. A  
YOUTH BED & mattress, Babyline, \$15. OS 5-9205. A

## FOR SALE

ENGINE, West Bend, 2 1/2 hp, chromed cover, \$25. PL 5-4497. A  
TV CABINET, early American style, maple, \$50; TV, 21" Admiral, 1959, \$75; or both for \$100. OS 9-1698. A  
RIFLE, .22, single-shot, Remington, target model 510, w/ peep site, sling & case, \$20; spinning reel, super-quick ocean-type, w/20-lb. test line, \$12.50. FR 5-6095. A  
STOVE, Gaffer's & Sattler, copper tone & chrome, deluxe model, double oven, grill, thermal eye, oven sentinel, rotisserie. \$225. OR 2-1731. A  
STOVE, Western-Holly, 4-burner & grill, auto, pilot, timer & clock, \$80. TE 1-1381. A  
BAY GELDING, 15 1/2 hds., trained, quarter horse, black saddle, man's, matched bridle, breast strap, \$450. FR 7-3487. A  
CITROEN, 1960, ID 19, radio, safety belts, 18,000 miles, \$1395. GE 4-6891. A  
ENLARGER, 35 mm, F/3.5, extra bulb, \$20; barbell set, wide bar, 60 lbs., \$7.50. 371-8907. A  
SPINNING WHEEL, authentic Early American, solid wormed birch, 30" high, \$35; qassio-bench, Early American, solid birch. \$30. PL 6-7533. A  
REFRIGERATOR, Servel, 10 cu. ft., \$30. 370-2656. A  
HOUSE, 3-bdrm., terraced lawn, lae, backyard, ocean view, \$65,000. Box 2002. A  
BOAT, 16' outbd., 7' beam, Fiberglass o/wood, 35 hp Johnson elec. ena. w/ generator, tiltable trailer, life preservers, ski rope. \$895. OS 6-6108. A  
DOG, male, Samoyed, 14-mo-old, AKC registered, has had rabies & distemper series. \$100. OS 6-5921. A  
CHEVROLET, Biscayne, 1958, 6-cyl., 2-dr., stick shift, htr., \$750. DA 4-1645. A  
MERCURY, Sun Valley, 1954, \$275. VE 7-6677. A  
SKI BOAT, Glaspar, 14', trailer w/new tubeless tires, 3 extra new tires, \$700; auto, washer, Frigidaire, 6-yr-old, \$75. OS 9-4307. A  
SHAVER, elec., Schick 25, w/cord & case. \$7. FR 1-2679. A

## WANTED TO BUY

TYPEWRITER, portable. PL 7-2753. B

## RENTALS OFFERED

HOUSE, 2-bdrm., unfurn., front unit w/attached garage, modern, aarbaae disp., water & lawn service pd., 2 children OK, no pets. \$105. OS 6-8768. E  
APT., unfurn., 1-bdrm., convenient to transportation, redecorated, \$65. AX 2-1625. E  
HOUSE, 2-bdrm., unfurn., disp., aarbaae, near schools & 1 1/2 blocks from park & pool. \$110 mo. DA 9-7756. E  
HOUSE, 1-bdrm., unfurn., 2 miles from Norair, \$75 mo. OS 6-6956. E  
HOUSE, 2-bdrm., fenced lot, unfurn., \$85; 1-bdrm., furn., \$85. EX 7-0600. E  
HOUSE, 1-bdrm., back yard, water pd near Northrop, no children or pets, \$75 OR 4-6390. E  
APT., 1-bdrm., duplex, near Aviation Blvd., unfurn., children & pets OK, yard, patio, stove, refrigerator available, \$65 mo. OS 5-6189. E

## PERSONALS

WE WISH TO EXPRESS our sincere appreciation to all our friends for the cards, flowers & many acts of kindness shown during the recent illness & passing of Henry J. Hooton. MRS. ALMA HOOTON & FAMILY. L  
THANK YOU to all our friends for their kindness & generosity. MR. & MRS. WM. ADELMANN. L

## FOR SALE OR TRADE

SEWING MACHINE, Necchi B U Mira, semi-automatic, \$175 or trade for wood power tools, table saw, planer-jointer. GE 0-1952. M  
CHEVROLET, Bel Air, 1957, \$1200 or take older car for equity. FR 6-2110. M

## TWO HOLES-IN-ONE FOR CHRISTMAS

The NRC 1961 annual Christmas golf tourney was highlighted by a million-to-one chance happening. Myron Baker made two

## Scotch Doubles Keg Tournament Scores Big Hit

That mysterious Scotch Doubles holiday bowling tournament was a lot of fun say all those who participated.

Team winners were Janet Gamble and Roger Paine, first place; Corinne Davis and Lou Hansen, second place; Pat Metro and George Blount, third place; and Jane and Don Schulke, fourth place.

High handicap series was won by Janet Gamble and Roger Paine with a 718. High scratch series was won by Corinne Davis and Lou Hansen with a 598.

## G &amp; MERS PLAN TRIP TO GATHER CHOICE MARBLE

This weekend, January 20, the NRC Gem and Mineral Club will pack their sleeping bags, load the pickups and peel out for Marble Canyon in quest of exotic specimens of marble, states Bob Snyder, commissioner.

There will also be opportunity to gather rhodonite, dumortierite, sandstone concretions and many other materials.

Marble Canyon is down Ocotillo way. It can best be reached from Highway 80—San Diego to Calexico.

Bob requests that one and all bring water and firewood. The camp will be a dry camp and in the desert.

Equipment should include a rock hammer and a crowbar or pinchbar.

Take Highway 101 to Highway 80. Go past Mountain Springs 8.1 miles and watch for Shell Canyon Road. Ocotillo is .7 mile. The campground, in low hills at canyon entrance is 3.6 miles from Ocotillo.

## SKEET CLUB TO START SEASON NEXT SATURDAY

The NRC Trap and Skeet Club will resume shooting schedule for 1962 Saturday, January 20, it has been announced by Bob Bagby, commissioner.

The place is Rancho Angelus Gun Club, 19140 South Main Street, Gardena. Shooting will start at 10 a.m. and continues through the day.

holes-in-one! He appropriately received two NRC hole-in-one trophies.

Mike Turney topped the tourney with an overall low gross of 147. Low net was taken by Ed Stone with a 135. Other winners were first flight, a tie between Reed Hays and Mac McLarney with a 142. Second flight was won by Mike Craig with a 138. Third flight was taken by

Dale Leedom, 141. Joe Horst won the fourth flight with a 142. Fifth flight was won by Dan Casson with a 149.

Even as now, golf club members are preparing to play at the Ojai golf club next Saturday. Entry forms are available at Personnel Activities. Starting time will be 7 a.m. with a limit of 100 golfers.

## Art For Art's Sake Can Pay Off Says Comish

By Commissioner Stewart Luce

It was once said, "To enjoy art is to enjoy life."

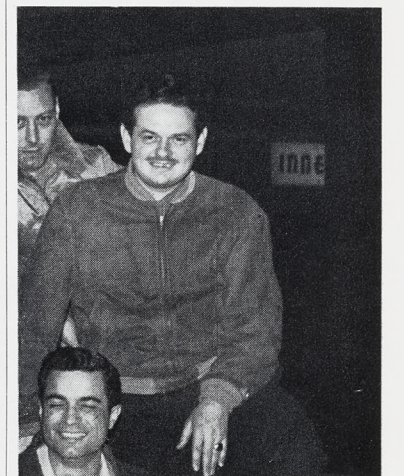
Art is the creative power of mankind, it enriches everyone's life.

Try a simple drawing or a painting. It becomes part of you, a creative part, a lasting image of creative ability and a reward of successful effort.

Art is for men or women. In the art organizations of our own Company as well as others, women hold their own against male artists. They even are better in some fields. For instance fashions. After all, clothes are always on their mind. Age is also of no concern in the art world. Youngsters may start out in the art world in their teens. Other people may wait until they have few responsibilities, such as the late Grandma Moses. Her family raised, she looked to art to express herself.

The NRC Art Club is composed of people who enjoy art. We have a regular meeting every Thursday from 7 to 10 p.m. at Joe Kalina's Studio, 3234 West

157th Street, Gardena. This is our figure drawing class. Our other activities are exhibits,



STEWART LUCE

paintings, trips and entry into contest.

The Art Club is composed of mostly professionals, but welcomes amateurs wholeheartedly. Fellow members are always interested in helping the novice. There is no bigger thrill or reward than to sell something you have created, a painting or sketch in which you have given part of yourself.

## LEARN TO DANCE WITH THE NRC, NEW CLASSES ARE NOW UNDERWAY

"Start off the new year on the right foot," says Norair NRC Dancing Commissioner Wes Williams.

The best way to do this according to Wes is by learning the fox trot, swing, and cha cha. Even the twist might help.

The NRC Dance Club held its first class of the new year on January 4 at the NRC Clubhouse. Bill Martin will continue as

dance director. The last night to register is Thursday, January 18.

The beginners' class meets from 7 to 8:30 p.m. to learn the basic steps of the popular routines. The advanced class follows on the same evening from 8:30 to 10:30 p.m. Here instruction is concentrated on the rumba and the eastern swing.

Ten lessons which cover a 10-week period is \$10 a person.

## Honolulu Trip Was Fun

HAWAIIAN HOLIDAY—Northrop Corporation Hawaiian Holiday was biggest success yet recorded by NRC Travel Club Gadabouts. It was so successful that immediate demand has been registered to make a repeat next Christmas. Travel Club is also studying plans for other sure-fire trips. These include the Orient, Europe, the fair at Seattle, and Tahiti!





# Friends in Need are Friends Indeed



**'Twas the Night Before Christmas**—Norair-Nortronics Adopted Family program wrote records in yuletide giving this year that surpass all former years. First the gifts were brought to the various donor organizations, then just before the holiday, they were all gathered at the Product Display Building ready for transport to the families.



**WHO WOULDN'T WANT TO BE ADOPTED?**—Norcrafter ladies representing a group of Engineering organizations pose with hoard of happiness for their adopted family. From left, Louise Winkler, Connie Cobrea, Margarita Hawker, Lucille Wood, Pat Evans, Faith Rhyne, Rose Roser, Sallye Rose, Nancy Blaine, and Lola Spencer. Seated, Louise Richardson.



## ADOPTED FAMILY SPONSORS

Company President Thomas V. Jones and Mrs. Jones came early to extend congratulations on the bountiful results of the Adopted Family program. At left is H. E. "Hap" Herd- rich, assistant to the general manager. Corporate Vice-president and Norair General Manager Dick Nolan is at right.



**NO VISIONS**—Sugar plums, see basket—were no vision in the adopted family gifts from Organization 8930. Here Marion Webb, Prezella Raines, Marge Walker, Beth Rhoads, and Gladys Burks make last minute arrangements before dispatching gifts.



**FOR ONE AND ALL**—Organizations 3560 and 3570 featured food, clothing, toys for their adopted family. Note outsized USAF "missile" in foreground. From left, Kathy Calvey, Frances Jean, Helen Smith, Ulna Price, Marge Rudluff, Betty Heitman, Joy McCarthy.



**MONEY TREE**—Manufacturing R&D featured a money tree topped by a \$20 bill with ten-spots coming next, followed by fives and ones. Packages of clothing and other good things completed picture. From left, Bette Barton, John Hanson, and Pat Noble.



**TRANSPORTATION "WHEELS"**—All set to deliver truckloads of gifts just prior to the holiday are Transportation's messengers of good cheer.

From left, Leo Reyes, Mal Mountain (P-A), Dave Carney, Bill Richardson, Marie Tully (P-A), Jack Ready, Jack Yerian, John Van Stame, Fred Brown.





# Northrop-Norair News

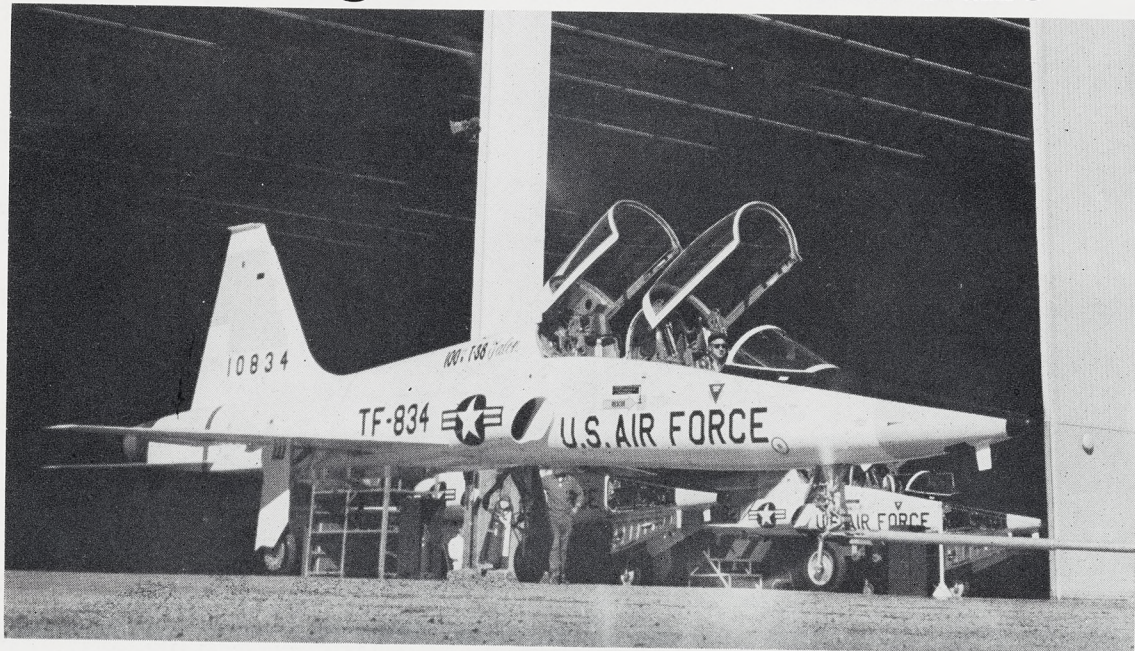
Issued biweekly by Norair Division of Northrop Corporation

Wednesday, January 31, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, RAPID CITY, EL PASO

## Out Flight Door at Palmdale



**T-38 TALON NUMBER 100**—The 100th T-38 Talon emerges from final assembly hangar at Palmdale and marks unprecedented safety record. The T-38 has not been involved in a single major accident throughout its flight test and operational programs.

## New Records Set In Cost Reduction

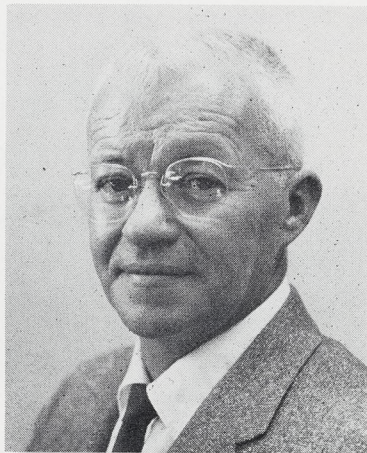
### AOC, SUBCONTRACT MANAGEMENT

Two important areas of Norair Division's cost reduction program have chalked up a seven-figure savings during fiscal 1960-61, it has been announced by Corporate Vice-president and Norair General Manager Dick Nolan.

The reduction accumulated through economical and efficient use of production facilities and in increased effectiveness of subcontract management.

Stated Mr. Nolan, "I want to commend the entire Division for its teamwork spirit in making this accomplishment possible. Operations personnel in Automated Operations Control and Materiel areas are to be complimented for their good efforts in this achievement. Valuable support was also

Control system realized substantial savings in hours and control. Materiel, through close analysis of cost targets recognized improvement potentials in subcon-



CARL HOOD

tract management. One particular case in point involved the highest value item for procurement on the T-38. This procurement is the result of long range planning, the use of all available management tools, and highly effective competition.

"Total savings approach the two-million dollar mark."

**The Automated Operations Control system, which was established at Norair in the summer of 1960, has proved**

(Continued on Page 2)



D. G. McNEAL

rendered by all departments, Technical, Quality Control, Finance, and Administration. "Specifically," he continued, "Norair's Automated Operations

## ADDITIONAL PROMOTIONS ANNOUNCED

New appointments and assignments on the manager level have been announced by Division General Manager Dick Nolan.

R. S. "Bob" Reed has been made manager, Major Subcontract Marketing department.

H. E. "Hap" Herdrich has been appointed manager, Site Activation department.

J. D. Matthews has been made manager, Technical Operations department. Mr. Matthews was formerly manager, Site Activation department.

Mr. Reed, who will report to (Continued on Page 4)



R. S. REED



H. E. HERDRICH



**TEST FLIGHT**—Northrop Deputy Air Force Plant Representative and Flight Acceptance Officer Major Jim Anthony sits in the cockpit of 100th Talon. After flight test, number 100 will be delivered to the Air Force Air Training Command for training of USAF student pilots. Three hundred and fifty-seven of the sleek, twin-jet aircraft are on order from the U.S. Air Force. T-38 is sister ship to N-156 fighter now being considered for deployment to U.S. allies.

## T-38 Records Earn G.E. Trophy for Miss Cochran

Jacqueline Cochran, America's foremost aviatrix and holder of more aviation records than any other pilot in the world, has been selected as the 1961 recipient of the General Electric Trophy. Miss Cochran was selected to receive the Trophy for setting eight new speed, distance and altitude records in the T-38 Talon supersonic trainer between August 24 and October 12, 1961.

The Trophy, established in 1953 and awarded annually for significant achievement in aviation, was presented to Miss Cochran at a special luncheon in her honor at the Statler Hilton Hotel in Washington, D.C., on January 30. The eight records set in the T-38 bring Miss Cochran's total of international records to 33. She set her first official international record in September 1939 when she flew a

Seversky monoplane 305.9 miles per hour over the 1000 kilometer closed course. Her top speed in the T-38 was 844.2 miles per hour over the 15 kilometer (Continued on Page 2)



JIM MATTHEWS



**FIRST LADY**—Jacqueline is the first civilian pilot to be awarded General Electric trophy. Record flights in T-38 helped win her the honor.



# COST REDUCTION AT NORAIR

(Continued from Page 1)

to be a highly effective management tool in production of complex weapon and space systems now under way in Norair shops.

It is also being applied with major successes to research and development contracts such as Laminar Flow Control.

**When AOC was installed, Mr. Nolan predicted that it would save hundreds of thousands of dollars a year on Norair contracts. The FY 1960-61 analysis proves this prediction true.**

Key to AOC operation at Norair was the successful marriage of Friden Corporation's Collecta-data automated data collecting and transmitting equipment to the high speed data processing, computing and reporting capabilities of Norair's IBM 7090-equipped Computing and Data-center.

The vast electronic brainpower of the computer, which by day solves space age scientific and mathematical problems, turns its attention at night to production

matters providing fast reports on location, status, schedule condition and cost in terms of labor hours of thousands of in-process manufacturing orders. This information provides knowledge of work to be done each day and is in the hands of supervisors and foremen at the beginning of the work shift.

The computer is currently processing 45,000 transactions each day.

The FY 1960-61 analysis itemized AOC saving in the areas of (1) manufacturing hours, (2) equipment and forms, (3) more effective control of tools and customer schedule changes, (4) control of status requests, (5) more effective control of sales order close outs, (6) reduced time spans in establishing priorities, (7) general increase in efficiency.

AOC is unbelievably fast in its reaction time. Reports on work done today are on the general manager's desk when the plant opens tomorrow. Such reports, formerly compiled manually, took days, weeks, months, to prepare.

Norair Materiel has been term-

ed one of the most forward-looking procurement operations in the industry. In January of 1959 at the onset of the T-38 program, the Company staged the first "supplier symposium" held on a prime defense contract. Attended by 161 key subcontractors to the aerospace industry in a two-day session, the meeting set the cost reduction stage for full realization of the Northrop slogan—"Putting the dollar sign in the design".

The symposium, due to its outstanding success in controlling prices on military contracts, has been widely copied.

The procurement savings made in FY 1960-61 were a direct result of the Division's regular program of smaller cost-targeted follow-on symposiums.

Materiel's Carl Hood and Manufacturing Control's D. G. McNeal, are quick to point out that their savings records could not have been accomplished without the wholehearted support and assistance of the entire division.

"Norair teamwork starts with management," stated Mr. Hood. "And continues through the complete enterprise. I wish to thank the Air Force Plant Representative, Technical, Quality Control, Finance, Administration, and the thousands of dedicated people working in those functions. With everyone working toward the same goal, how can we help but set records?"

Mr. McNeal heartily concurs.

## RIDERS TO RIDE AT CIRCLE BAR

The NRC Riding Club Commissioner Joe Black announces that the club will hit the trail February 11 at 2:30 p.m. at Pop Walker's Circle Bar Stables.

Location is 5543 East Imperial, South Gate.

"After exploring the mesas," says Joe, "everybody will meet for refreshments, furnished courtesy of the NRC."

## NEWS MOVES

The Northrop-Norair News has moved from the Administration Building to the Engineering Science Center.

Location is the third floor, directly opposite the elevators. Column 22-J.

Mail Zone is 33.

The phone numbers remain the same, 2456 and 2457.

# Beryllium Breakthrough Credit to 20-Year Man

The last issue of the Northrop-Norair News inadvertently neglected to bestow credit for genius

and know-how where credit was due.

The Air Force-sponsored contract, recently concluded, to develop the technology of beryllium extrusions and which brought national recognition to the Division, was accomplished largely through the personal capability and drive of Lyle Christensen of Norair's Material Sciences and Value Engineering group.

Mr. Christensen, a 20-year Norairer, was project manager on the program which produced 20-foot long aircraft quality channel shapes of .060-inch wall thickness, a breakthrough of much significance to the aerospace industry.

Nuclear Metals, Inc. of Concord, Massachusetts, subcontractors to Northrop, supplied technical assistance and facilities.

Mr. Christensen is program manager of another current extrusion program, also Air Force sponsored, which is developing the technology of steel extrusions. Phase I of this program has resulted in production of smooth-surfaced 20-foot lengths of tee-sections with .06-inch thick walls. Materials included H-11 tool steel and PH 15-7 Mo.

Phase II, currently under way, includes both cold and warm-drawing of extrusions to reduce wall thickness to .03 inches with close tolerance control.

Allegheny-Ludlum Corporation, Watervliet, New York is Northrop's subcontractor for technical assistance and facilities in the steel program.

record: 1143.1 miles — Elisabeth Boselli — France — 1955.

Distance — straight line — 1492.3 miles — Sept. 18. Old record: 1448.5 miles — Elisabeth Boselli — France — 1955.

Altitude — absolute — 56,071.3 feet — Oct. 12. Old Record: 47,169 feet — Jacqueline Cochran — U.S. — 1953.

Altitude — sustained — 55,253 feet — Oct. 12. This is a new F.A.I. record — Miss Cochran is the first to hold it.

## Northrop-Norair News

VOL. 20 NO. 3

1001 E. Broadway, Hawthorne, Calif.

A NORTHROP CORPORATION PUBLICATION

Published every other Wednesday NORAIR DIVISION

CHARLES BRADFORD, Editor

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## NRC GOLF SCHEDULE FOR 1962

The NRC has released the golf club tournament schedule for 1962.

Date	Limit	Tee Off	Course
February 17	100	9:10 a.m.	Apple Valley
March 24	100	7 a.m.	Gilman Hot Springs
April 21	100	9:30 a.m.	San Clemente
May 19	100	10 a.m.	El Rancho Verde
June 16	100	11 a.m.	El Rivino
July 22	100	11 a.m.	Whispering Lakes
August 25	100	7:30 a.m.	Ojai
September		(None Scheduled)	
October 6 and 7	80		Singing Hills
November 17	100	7:30 a.m.	Ojai

All tournament entries open the Monday prior to the tourney date and entry money will be accepted at the Personnel Activities offices, except the October Singing Hills tourney. Details for this tournament will be announced later.

## Joins Order of Talon



**CNATRA AND THE T-38**—Vice Admiral Fitzhugh Lee, chief, Naval Air Training Command, became third three-star Naval officer to join the Order of the Talon. Occasion was his flight last week with Norair test pilot Hank Chouteau. Photo shows Mr. Chouteau, Admiral Lee discussing flight plan as they walk through hangar on way to flight line.



**CALLING THE TOWER**—Ready to taxi out for take off are Admiral Lee and Norair pilot Chouteau. High-ranking Navy officials who have flown the T-38 are Vice Admiral Robert Pirie, deputy chief, Naval Operations, Air; and Vice Admiral J. T. Hayward, deputy chief of Naval Operations for Developments. T-38 high rate of climb and handling characteristics drew favorable comment from Admiral Lee. Flight was from U.S. Naval Air Station at Miramar.





**RIDES WANTED**

**7 a.m. — 3:45 p.m.**

NORMANDIE & W. 186TH ST., Gardena, J. M. Gorum, DA 9-6848.

AVIATION & 3RD ST., Manhattan Beach, Carson B. Wisdom, ext. 2568, FR 2-2873.

**7:30 a.m. — 4:15 p.m.**

WESTERN & SANTA CRUZ, San Pedro, Doua Hook, ext. 1973, TE 3-6281.

**8 a.m. — 4:45 p.m.**

CARSON ST. & CHERRY AVE., Lona Beach, Roberta P. Barbara, ext. 2123, GA 7-A097.

**RIDES OFFERED**

**8 a.m. — 4:45 p.m.**

MELROSE & VAN NESS, Los Angeles, C. M. Spindel ext. 518, HO 5-8023.

CARSON & NORMANDIE, Torrance, Joseph Nearino, ext. 2263, FA 8-6698.

**BBSF Classified Ads**

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

**FOR SALE**

THUNDERBIRD, 1959, r/h, puncture-proof w/w, 15,000 miles, light blue, full power equip., one owner, perfect condition throughout, \$2695 plus 1962 license fee, CR 1-6472.

LAWN MOWER, 20", Craftsman, power, reel-type, & power edger, trimmer, \$100 for both, WE 5-0493.

UNIFORMS, girl's, Hawthorne Christian School, sizes 6 & 7, skirts, 50¢; blouses 50¢. 379-1049.

TRIUMPH TR-3, 1956, roadster, w/jump seat, \$875. TE 1-6462.

MERCURY MONTEREY, 1954, h/top, Mercomatic radio, \$300. OS 5-5978.

TOOL BOX, Kennedy, 7-dwr., \$10. AX 3-2943.

HOUSE, 2-bdrm. & den, newly decorated, in Morningside, \$29,500. PL 6-3256.

LAWN MOWER, hand-type, Penn. Junior, \$20. PL 7-2753.

BICYCLE, boy's, 3-spd., Schwinn, racina handlebars, \$35. DA 4-0649.

SKI BOOTS, lady's, size 8, \$8; bowling ball, 16-lb., & bag, \$10; bicycle, boy's, \$5; dog bed, metal, w/pad, \$3.50; car cooler, Wright, \$25; 2-transistor radio, \$5. HA 1-2265.

HOUSE, Orange County, center-hall plan, 3-bdrm., 2 baths, den-dining room, breakfast bar, fireplace, built-ins, carpeted & drapes throughout, patio, professionally landscaped, block wall fence, 2-car garage, \$500 dn., \$19,950. OS 6-1365.

BABY CRIB, \$15. FR 4-3060.

STOVE, gas, O. & M., apt-size, 4 burners & oven, \$75. FR 8-5348.

SPEAKER, 15" Woofer, 16-ohm, 25-watt, w/University Crossover, \$25. TE 1-5158.

TV, RCA, portable, 12"x10"x8", \$45; crutches, pr., adjustable, \$6; bed frame, double size, steel, adjustable, \$4. ST 8-9709.

REFRIGERATOR, GE, 9 cu. ft., \$25. OS 5-3076.

DESK, solid birch, 25"x60", unfinished, \$60; TV, 21" RCA, table model, \$65. FR 6-4276.

TRAILER AXLE, tires, wheels, springs, \$20; baby carriage, Foldarola, \$5. 371-8945.

ROTISSERIE, Broil-Quik Chef, \$20. EX 1-7327.

BORGWARD, 1959, heater, w/w, factory service manual, \$750. OR 4-4965.

HOSPITAL BED, w/side rails, wind-up back & knee rest, \$85. AX 4-7348.

CHEVROLET, V-8, 1956, poweralide, p/steering, \$700; canoe, 17' Fiberglass white water, w/rubberized nylon canopy, \$185. FR 5-5139.

HOUSEHOLD FURNISHINGS, grand piano, provincial, \$450; range, Gaffers & Sattler, 1958, chrome top, \$90; refrigerator, Philco, 8 cu. ft., \$65; dinina rm. set, Philippine mahogany, complete, \$165; bedroom set, blonde, \$65. OS 5-2853.

RANGE, Westinghouse, elec., dble. oven, timer, clock, \$20. OS 9-7909.

TV, 21", table model, \$20. OS 6-3090.

DINING ROOM SET, mahogany, ext. table & 6 chairs, \$100. Call AX 1-9236 about noon.

TYPEWRITER, Remington, noiseless, table model, w/extra lona carriage, \$25. DA 3-4900.

**NRC Sports Car Club Will Stage "Nightmare" Slalom, February 17**

Here is a nightmare that won't be caused by raiding the icebox.

A unique slalom, Saturday, February 17, Nortronics Parking Lot F, has been announced by NRC Sports Car Club Commissioner Paul Ankeny.

It will be called the "Nightmare Slalom". It will begin at

**FOR SALE**

BOX SPRINGS, mattress, Hollywood steel frame, double, never used, \$40. PL 5-8040.

DIVAN, 3-cushion, deep red, \$35. OR 3-0462.

THUNDERBIRD, 1959, 4-pass., full power, \$2495. PL 6-2288.

STOVE, apt-size, gas, \$50. DA 3-5900.

GUITAR, Martin, D-18, \$85; electric guitar, Gibson, w/small fender amp., \$70. FR 5-5139.

MOTOR SCOOTER, 1961 Lambretta, 1500 mi., \$285. DU 8-3985.

CADILLAC COUPE, 1954, p/brakes & steering, \$795; motorcycle, Powell, 1949, \$125; house, 2-bdrm., custom den, hardwood floors, dble. garage, 45'x150' lot, \$15,500. FA 0-2097.

SINGER, 1960, convertible, r/h, 17,500 miles, \$950. DA 9-1705.

YOUTH BED, w/sides, \$15; crib, \$15; 2 matched painted chests of drawers, \$15; baby buggy, \$5. DA 3-7969.

FORD COUPE, 1947, w/1953 Chrysler eng., tuck & roll, racina slicks, & floor stick shift, \$250. OS 6-3305.

BENCHES & TABLES, suitable for garage work benches, playrooms, stores, 7'8" lona, 2'1" wide, 2'6 1/2" high; 6'4 1/2" lona, 3'1" wide, 3' high; 3'5" lona, 2'6 1/2" wide, 2'8" high, \$7.50 ea. or \$35 for lot. FR 4-7761.

VEGETABLE JUICER, Acme Supreme, 3-yr-old, \$25; lawnmower, rotary, 4-cycle, Briggs-Stratton, 3-yr-old, gas, eng., \$20; house, Palos Verdes Estates, ocean view, large backyard, 3-bdrm., \$65,000. OR 2-5578.

**WANTED TO BUY**

CHEVROLET, 1953 or 1954, 6 cyl., stick-shift preferred, car must be in good mechanical condition, also good tires OS 6-9989.

HI-FI record player, PL 4-3050.

**FREE (to be given away)**

DIRT, top soil, OS 6-5921.

**RENTALS OFFERED**

APT, 2-bdrm. w/w carpet, drapes, & built-ins, 1/2 mile from Norair, \$100 mo OS 6-8816.

HOUSES, 2, 2-bdrm., unfurn., all new paint, modern, aarbaae disp., w/aarbaae, water & lawn service pd., 2 children OK, no pets, \$100 & \$105. OS 6-8768.

APT, 1-bdrm., unfurn., near Northrop, child OK, aarbaae disp., hardwood floors, drapes, water & trash pickup pd \$70 mo. OS 5-6285.

HOUSE, 2-bdrm., unfurn., double aarbaae, fenced lot, w/w carpeting, walnut paneled living room, 1 1/2-yr-old, 1 mile from Norair, \$115 mo. OS 6-6108.

**RENTALS WANTED**

GARAGE, for storage of misc. household goods & small boat, East Torrance or South Gardena area preferred. DA 3-7781.

**CHILD CARE OFFERED**

CHILD CARE, licensed, breakfast & lunch, close to Northrop, have room for 1 more. references. OS 5-7088.

**PERSONALS**

SINCERE APPRECIATION for your expressions of sympathy during the lona illness & passing of our father & husband. AUDREY DE SHAZO & SON.

Girl to share 1-bdrm. apt., furn., pool, util. pd., 2 mi. from Northrop, \$60 mo. Box 2001.

**FOR SALE OR TRADE**

MONZA COUPE, 1962, maroon, black int., 102 hp eng., 4-spd. trans., w/w, radio, padded dash, tinted glass, seat belts, spare wheel lock, big clutch, \$2375 or trade for 1961 Impala. FR 6-6142.

MOBILE HOME, 1958, 2-bdrm., sleeps 7, \$3500, or will trade \$2000 equity for 1-bdrm. trailer. FA 0-1896.

**NRC INTRACOMPANY ANNUAL TENNIS TOURNAMENT**

The NRC Tennis Club announces that members will take part in the upcoming NRC intracompany tournament.

Deadline for entries at Personnel Activities Offices is February 12. There will be a nominal fee.

7:30 p.m. and consists of running a twisting, turning obstacle-type course. Entry fee is \$1.50 a car.

A party at the NRC Clubhouse Annex will follow.

Earlier in the month, on February 12, club members will gather at the Annex to see a P-1800 Volvo. In addition, a film "1961 Sebring" will be shown.

**BASKETBALL FIRST ROUND STANDINGS IN**

The first round of the NRC basketball tournament is now on the books.

Team standings:

	Wins	Losses
Nortronics	4	0
Turncoats	3	1
Elite	2	2
Trotters	1	3
Zephyrs	0	4

The Nortronics team was composed of Don Kies, Bob Vickers, Dick Rountree, Dan McGregor, Walt Rausanoff, G. Martinez, R. Latchford, and D. Van Valkenberg.

Top six averages were taken by:

	Team	Avg.
Don Kies	Nortronics	17.3
Bob Vickers	Nortronics	17
Clarence Marks	Trotters	15
Mike Bryant	Turncoats	14.7
Don Greco	Elite	14.3
Dick Rountree	Nortronics	13.3

Free throw honors went to:

	Team	%
Bob Monteilh	Turncoats	88
John Pineda	Turncoats	75
Roland Sundberg	Elite	67

**GEM-MINERAL FOLK TO SEARCH FOR HOWLITE**

The NRC Gem and Mineral Club, Wednesday, February 14 at 7:30 p.m., will hear Dorothy Craig speak on how to display gem and mineral collections, it is announced by Norair Commissioners Dan Kozlow and Doyle Shook.

Also, as part of the program there will be a silent auction which will enable those in attendance to bid on jewelry items donated by club members.

Also for February Gem and Mineral bill-of-fare, a field trip is being planned to Solemint Canyon, this on February 18. The search will be for howlite.

For March, Gem and Mineral folk are organizing a show entitled "Springtime in Gems" which bids to be the club highlight of the year. It will be held in the week of March 24 and 25 in the Product Display Building.

**SURF FISHERS TO SEE FILM**

Pat Sullivan (no relation to Washington Norcrafter Secretary Pat Sullivan) will speak before the NRC Surf Fishing Club on Tuesday, February 6, it is announced by John Pawlicki, commissioner.

Mr. Sullivan who hails from the AB&S Sporting Goods in Inglewood will show films he took on his recent trip to Canada.



**THE CHAMP**—Clarence Brush took a five-day payoff vacation on the Russian River with most of his waking hours devoted to tackle repair due to the outsize size fish in that country. One hour before departure for home, Clarence snagged one that didn't get away, as photo testifies. He caught a record 36 1/4 inch steelhead ocean trout. Weight was 14 pounds 4 ounces. It was one of the four largest fish ever taken from the river. It was worth it even if it took Clarence 30 minutes, broken glasses, wet clothing, and 200 yards of river front (several times) to land that baby. A 12-pound line and 6-pound leader did the job.

**Waistlines Waste Away When Norcrafters Play at Tennis**

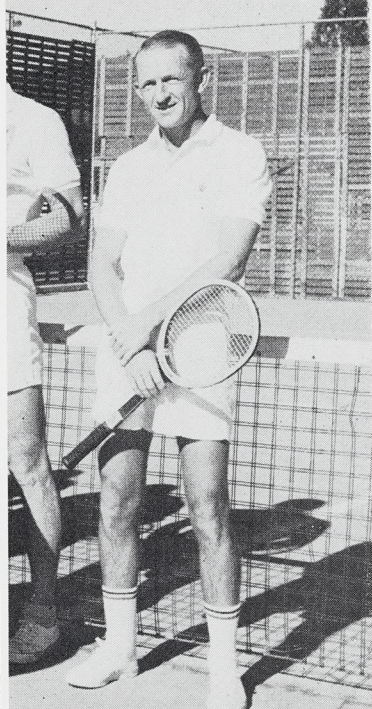
BY JOHN POTTS, NRC TENNIS COMMISSIONER

Three years ago Northrop was invited to field a team in the then newly-formed West Los Angeles Tennis League. Such companies as Ramo-Wooldridge, Douglas, Hughes, and Rand had expressed a significant interest in tennis—the league was the result. This was also the beginning of the NRC Tennis Club. Northrop came up with a fine team, which

as well as tournaments and other special events for all members. In our case this is where NRC comes in by providing facilities, financial support, inspiration from time to time, and other assistance in making these group advantages available. We, in turn, provide the participation.

In terms of participation, the club program is making good progress. In the past six months, the instruction program under Bill Lurie, National Hardcourt senior champion, has more than doubled in scope. Between 250 and 300 individual lessons were provided. More than 50 "ladder" matches have taken place.

Our roster of over 100 members includes quite a few women as well as men, "oldsters" as well as youngsters, beginners as well as champions. You name the brand of tennis—we play it! Approximately 40 members have come into the club during the past year, are continuing their activity and apparently having a lot of fun in the process. They have had many an enjoyable workout in friendly competition, left considerable tension and perhaps a few pounds at the courts and undoubtedly have noticed a distinct change in their physical condition.



JOHN POTTS

has been a top contender in the league from its inception.

The response to NRC's call for players was surprisingly large and enthusiastic. Apparently, considerable interest in tennis existed at Northrop. As a matter of fact, considerable tennis interest exists in the U.S. as a whole. According to "World Tennis" magazine, tennis is one of the highest participation sports with 6,714,000 participants, compared to golf, 5,400,000; skiing, 3,000,000; football, 1,780,000; track and field, 591,000.

Clubs have contributed greatly to the promotion of tennis in general. Although it may take only "two to tango", clubs provide tennis instruction, ladders for experience, teams for leagues,

To start your personal tennis program in this club, simply contact Personnel Activities, Ext. 2784 and request that your name be included on our club roster. You will receive a roster, ladder rules, current ladder standings and other background data. Five courts are reserved for our use every Saturday from 9 a.m. to 2 p.m. at El Camino College, Redondo Beach Blvd. and Crenshaw. Newcomers are invited to come out to the El Camino courts, meet the players, observe the action, or see what goes on in the instruction area. All members are also cordially invited to attend any of the team matches as indicated on published league schedules. You may choose your own particular area of interest and your personal tennis program is under way.



## J-A Company of the Month



**AWARD TO BARCO**—Tom McCarthy, manager, Norair Administration, center, right, presents Junior Achievement "Award of the Month" to Barco Company, Division-sponsored J-A corporation. Proudly accepting is Barco President Gary Kruger. Standing in rear are J-A advisors, from left, Art Dicks, Nortronics; Norair's Joe Druliner, Mose DeMasters, Manny Wise, Southwest J-A manager; and Norair's Don Miller. Barco young folk make and market the "Weatherman." Norair also sponsors Placo, makers of western-style wall plaques.



**BARCO BOOKKEEPING** — Financial report mysteries are no mystery to J-A trained young men and women. Here Norair's Don Miller, assistant business advisor to Barco, goes over double entry ledgers with Shirley Thompson, Inglewood; Sandy Gagnon, Leuzinger; Shirley Davis, Hawthorne; and Ben Allgood, Morningside.



**SHIPMENT** — Barco Company conducts final inspection and shipping session on some of their novelty products. Norair's Jack Miller, explains the little things that make for acceptable "hardware." From left are Lynda Tyler, Leuzinger; Priscilla Slocum, Morningside; Pam Whitesides, Morningside; Jim Grable, El Segundo (standing); Brenda Travis, Inglewood; and Judy Gardner, Inglewood.



**PLACO**—Finishing touches are applied to Placo's products during a regular workshop session. From left are Sandra Meade, Lennox; Norair Advisor George Swanner; Joe Piscitelli, Serra; Bridget Foley, Inglewood; Bruce Smith, Bishop Montgomery; Chuck Davenport, Inglewood; Sandra Lamping, El Segundo; and Maura Spencer, El Segundo.

## To Managerships

(Continued from Page 1)

the vice-president and assistant general manager, Operations, is a 10-year Norcrafter. He has held the positions of methods engineer, assistant chief methods engineer; general supervisor, Contract Administration; and chief, Subcontract group. He was in the latter assignment at the time of his appointment to the managership.

Prior to Northrop, in the years 1944-46, Mr. Reed was associated with Convair-San Diego and with Lockheed Aircraft at Burbank. He held the position of industrial engineer with both firms.

Mr. Reed was educated at the University of Michigan where he majored in economics and law. He received his B.A. in economics in 1947 and his LL.B. in law in 1950.

He has received the Northrop Patent Award for Industrial Engineering plant layout manual. His favorite hobbies are camping, fishing, and cooking.

Mrs. Reed, Mary, an 18-year Norcrafter is well known to thousands throughout the plant. She

the T-38 and assistant to the general manager.

Before joining Northrop, he was superintendent of Manufacturing Services for Pullman Car Works in Chicago. During World War II he was general supervisor of Planning and Production Control for Douglas Aircraft.

Mr. Herdrich majored in engineering under a special program offered by the Alabama Polytechnic Institute and completed courses in Business Administration, Labor Relations, Management, and Economics at the University of Chicago, the University of Southern California and the University of California at Los Angeles.

He is a member of the Society of Automotive Engineers and is chairman of its governing board for the Southern California section.

Mr. Herdrich will report to the vice-president and assistant general manager, Operations.

Mr. Matthews has been associated with Northrop 18 years. He has been chief project engineer on the Snark program for 10 years. A key member of Norair management, he took part in over 15 different off-site locations on the Snark program, including the final installation, checkout, and activation of the site at Presque Isle, which was completed with a substantial cost underrun.

Mr. Matthews is a graduate of Spartan School of Aeronautics, Tulsa, Oklahoma, and is a registered mechanical engineer in the State of California. As Site Activation department manager, he has had overall responsibilities for Norair's activities at Rapid City, South Dakota on the Titan missile.

Mr. Matthews will report to the vice-president and assistant general manager, Technical.

## Buy Savings Bonds

is in charge of Mail Services, Administrative Services.

The Reeds have two children.

Mr. Herdrich began his association with Northrop in 1949. He has held the positions of assistant manager of Industrial and Plant Engineering, staff assistant to the president, director of Master Programs and Analysis, program manager for the SM-62 and

## Red Cross Commends Night Norcrafters for Support

AMERICAN NATIONAL RED CROSS  
Regional Blood Service  
Los Angeles and Orange Counties

Mr. William Larrabee  
Vice President — Legal  
Northrop Corporation

Dear Mr. Larrabee:

We wish to express our appreciation to you and to the employees of Northrop Corporation for the cooperation and response to the special appeal we made for blood.

Contributing to the great need at this time was a real community service and the many pints collected on January 9 helped to maintain an adequate supply for hospitalized patients of this area during the critical holiday period.

We hope you will convey our appreciation to those who assisted with this special recruitment effort and with the necessary arrangements for a Red Cross Bloodmobile.

Many thanks from all of us at the Blood Center and our best wishes for the New Year.

Sincerely,  
DANIEL J. HAUGHTON  
Chairman, Blood Program

Norair Division participation in the January 9 visit, a night shift event, received direct praise from Mr. Larrabee.

"Norair people did a fine job in response to the Red Cross appeal for this special need," he stated. "This demonstration of public spiritedness has earned the gratitude of all the communities in the Los Angeles area."

Charles Boyle, supervisor, Personnel Activities, advises that the next bloodmobile visit will occur on February 21, a Wednesday. The location will be the Product Display Building. Time is 7:30 a.m. to 12:30 p.m.

Transportation pickups will be at Engineering Science Center lobby, Plant One main lobby, Nortronics main lobby, Crenshaw cafeteria, and Mariposa.





## From Jacqueline Cochran

January 29, 1962

Mr. Thomas V. Jones  
President, Northrop Corporation

Dear Tom:

I don't want to let twenty-four hours pass until I have tried to put on record my deep and sincere gratitude for the honor paid me by you and your associates last evening.

I have indeed been fortunate and privileged to receive a great many honors from our country and from institutions but I have never received any tribute that touched me so deeply as your words did last night. The helmet is the most unique I have ever seen and will always serve as a token of a past program that gave me tremendous happiness and pleasure and I hope contributed something to your organization.

If I had the gift to write poetry maybe I could express my appreciation more adequately. I know it will interest you that I have been asked perennially for more than ten years by the Women's Archives of Radcliffe College for my private papers and mementos so this beautiful treasure will certainly be preserved for posterity.

Will you please convey my thanks also to all those in your organization who helped make this tribute such a memorable and perfect occasion.

Kind personal regards.

Sincerely,  
Jacqueline Cochran



**PRESENTATION** — Photo shows Northrop President Thomas V. Jones at moment of presentation of silver-plated helmet to Jacqueline Cochran. Testimonial to which Miss Cochran so touchingly refers in her letter above, was held at Antelope Valley Golf and Country Club as expression of love and friendship felt by Northrop as a company and by each Norcrafter privileged to work with her during record-breaking series of T-38 flights. One hundred and seventy persons attended.

## BLOODMOBILE HERE

February 21

# FOURTH ANNIVERSARY FOR PACE PROGRAM

NETS 18 CONTRACTS IN 26 MONTHS, MORE DUE

PACE is celebrating its fourth birthday this week.

A dinner party at the Cockatoo with 35 key members of the program in attendance marked the occasion and also served fit-

tingly as a program milestone for it was announced that work has just been started on a new PACE installation contract with General Dynamics-Pomona. This is the eighteenth contract to be undertaken in the short timespan of 26 months since the service was first offered to American industry.

Extending best wishes for continued success to D. N. Petersen, Norair director, PACE section and his team, were key members of Norair management headed by Corporate Vice-president and Division General Manager Dick Nolan.

In a special message of congratulations to PACE, Corporation President Thomas V. Jones said, "Management is what you do with your technological and administrative competence. Management is the catalyst that changes a potential into a capability. PACE is also a valuable tool for improving the realization of your management capability."

"Congratulations on your fine progress."

Mr. Nolan, who first saw the possibilities of PACE as a management science tool and who started the program at Norair said, "People want to do a good job. If work is not efficient, there is good reason. Often that reason

is some inadvertently induced management roadblock. PACE is a program that identifies these management roadblocks.

"PACE is another step in our research efforts to bring the ad-



D. N. PETERSEN

vantages of modern technologies to the equation of successful enterprise.

"My best wishes for your continued success. Your work is a credit, not only to Norair Division, but to the entire aerospace industry."

Developed originally at Norair to aid production and control costs on the T-38 and Boeing

(Continued on Page 2)

## MANAGEMENT SCIENCE TOOLS

Norair management science tools now in use in the Division include:

- Value Engineering.
- Integrated Management Systems.
- Management Capability Improvement Program.
- PACE.
- Target Cost Program.
- Automated Operations Control.
- Value Analysis.
- Manufacturing Engineering Savings Account.
- Division Plan.
- Long Range Planning.
- Management Operating Report and Budget Review.

## Twenty-year Pins go to Fifty-Six

Fifty-six Norcrafters turned 20 years service in January to start 1962 off in fine style.

Their names and seniority dates:

William T. Dwyer.....	12-12-41
Ralph M. Jones.....	12-17-41
Robert J. Lehman.....	1- 3-42
Victor L. Breneman.....	1- 3-42
Edwin E. Arnegard.....	1- 3-42
Henry A. Solak.....	1- 5-42
James G. Aycock.....	1- 5-42
Ruth T. Lindstrom.....	1- 5-42
Vincent E. Ziegenbein....	1- 5-42
William P. Bailey.....	1- 6-42

(Continued on Page 2)

## Diamond Pins

**TWENTY-YEAR NORCRAFTERS**—Starting the new year right, 56 Norcrafters during January celebrated 20 years with the Company. The group met with Corporate Vice-president and Division General Manager Dick Nolan for congratulations, pin presentations, and informal discussion on Division's business outlook. Mr. Nolan stands in center. Ladies flanking him from left to right, Isabelle Ainge, Mildred Snell, Myrtle Riddle, Edythe Steen, Gertrude Lehman, Lillian Stroh, Jo Roth, and Ruth Lindstrom. For all names see list adjoining. Four members were unable to attend for photo.

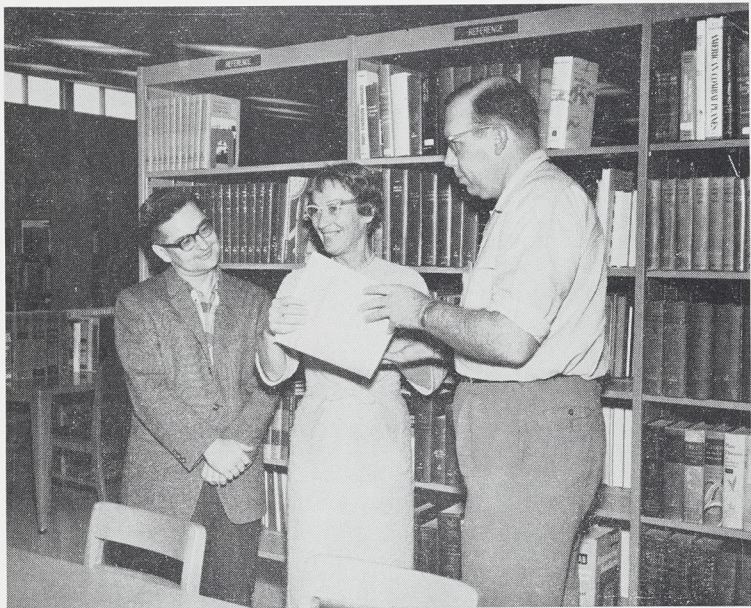




## Storehouse of Science Knowledge



**NEW COUNTY LIBRARY IN HAWTHORNE**—Twenty thousand square feet of books, magazines, reference material, brings to Hawthorne area what has been termed by Supervisor Kenneth Hahn the finest library facility in the Los Angeles County system. Of particular interest to Norcrafters is the technology section, where thousands of volumes are available covering far-ranging subjects in the aerospace arts. New library was dedicated February 3. Hawthorne Mayor Don Martin served as master of ceremonies.



**LIBRARY OFFICIALS** — From left are E. J. Melanson, reference librarian; Mrs. Deborah Wilds, L.A. County Centinela regional librarian; and Robert Knepper, regional reference librarian. Mrs. Wilds holds copy of History of Technology. Interesting note is section containing city directories of all major American cities. San Antonio's directory features T-38 on its cover.

## PACE Birthday

(Continued from Page 1)

work, PACE has proved to be one of the most significant advances in the arsenal of modern management techniques.

The technique, which is essentially a new device for measuring group effort effectiveness in manufacturing tasks, has now been applied to all phases of activity—finance, engineering, research and development, test, services, even hospital administration.

Wherever PACE has been installed, facility utilization in relation to effort has shown steady uptrending curves. These increases have become a permanent part of the picture because they are built into the very fabric of management structure itself.

**When recognized as an outstanding device for improving management capability, PACE was quick to catch on nationally. American industry was interested and requests for information came each day.**

In obliging, the Division was also asked to offer PACE services and know-how to other companies. A program was formu-

lated and the first installation contracts were signed in October 1959. Contracting companies were General Electric's Missile and Space Vehicle Department in Philadelphia and Raytheon Manufacturing Company, Missile Systems Division at Andover, Massachusetts.

Boeing was fifth to contract for PACE. Starting with a pilot program, the contract was then enlarged to cover the Aerospace Division.

Companies and service organizations that have installed PACE also include Hamilton Standard, General Dynamics-San Diego, General Dynamics-Astronautics, (and now General Dynamics-Pomona), Nortronics Precision Products, Rohr Aircraft, Daniel Freeman Memorial Hospital, Bell Helicopter, American Airlines, Aerospace Corporation, Hoffman Electronics, and General Controls Company.

**The first military installation of PACE was the U.S. Naval Air Station, Overhaul and Repair Department, Quonset Point, Rhode Island.**

Mr. Petersen expects that the dollar value of PACE contracts will show a 30 per cent increase

## Twenty-year

(Continued from Page 1)

Bernard R. Doyle	1- 6-42
Gertrude E. Lehman	1- 6-42
Rudolph T. Wenzel	1- 6-42
Harry L. Gehr	1- 8-42
John M. Harris	1- 8-42
Frank L. Romero	1- 9-42
Alton M. Canfield	1-10-42
Mildred O. Snell	1-10-42
Lawrence E. Moncrief	1-10-42
Albin A. Johnson	1-11-42
John F. Kommers	1-11-42
Norman O. Wilson	1-11-42
Josephine M. Roth	1-12-42
Howard C. Bovard	1-12-42
Donald R. Guyse	1-12-42
Denny D. Wilson	1-12-42
Earl R. Jackson	1-13-42
Dennys Pointon	1-16-42
Kenneth B. Jamison	1-16-42
Edward A. Harradine	1-16-42
Earl H. Jones	1-17-42
Jess M. Duer	1-19-42
Herbert Gryde	1-19-42
Leonard J. Judd	1-20-42
Clifford A. Tollefson	1-21-42
Donald C. Mullet	1-21-42
Gerald S. Hewitt	1-23-42
Willis B. Morris	1-24-42
Roy C. Oates	1-24-42
Euclid L. Drapeau	1-25-42
Irving Van Velsir	1-25-42
David R. Adams	1-26-42
Melvin C. Cooper	1-26-42
Carl Lippon	1-27-42
Wallace W. Plaskett	1-27-42
Charlie A. Clarke	1-27-42
Earl R. Weikum	1-27-42
Isabelle M. Ainge	1-27-42
Lillian I. Stroh	1-28-42
Paul L. Minoletti	1-28-42
Myrtle T. Riddle	1-29-42
Edythe S. Steen	1-29-42
Boyd L. Ashton	1-29-42
John R. Bellevue	1-29-42
Edward M. Walkley	1-30-42
Francis E. Lippert	1-31-42

in 1962 over 1961. Profits, due to consistent good management, have remained at a consistent level.

Mr. Petersen also forecasts that PACE lectures and briefings during 1962 will be heard by over 5000 key people in American industry who in turn guide the group efforts of a conservatively estimated two million persons in the industry.

Recently overseas governments have expressed interest in PACE. The Division has conducted seminars for teams from Japan, France, Italy, West Germany, Canada, Australia, and the British Isles.

## NEWS BRIEFS

**AIR COACH YIELD**—Carl Hood, director, Materiel, reports that Norair Division has recorded 22.4 per cent savings during the period 15 July to 31 December, by the use of jet air coach instead of first class for company travel. Norair reinstituted jet air coach last summer as standard travel accommodations whenever available. It is now reported that almost all defense industry in the Los Angeles area uses this less expensive mode of travel for personnel on company assignments. It is also interesting to note that 77.7 per cent of private individuals use jet coach accommodations in preference to first class.

**TWIN-JET SAFETY**—The T-38 has received her baptism in nighttime single-engine landing, it is revealed by Frank Mathes, director, Customer Service section. Captains I. D. Appleby and R. E. Ballow, Webb Air Force Base have the honor. While cruising at 13,000 feet altitude in tight formation, right engine unwound to zero RPM. Fire and sparks were reported by their wingman. Emergency was declared and a normal single-engine landing was made followed by uneventful taxi to parking area. No aircraft damage . . . First two classes of instructor-pilots have completed Talon training. Party was staged in recognition of the event.

## Northrop-Ventura Division Is New Name for Radioplane

Northrop Corporation will change the name of its Radioplane Division to Northrop Corporation—Ventura Division effective April 2, 1962, it has been announced by Thomas V. Jones,

president.

"This change reflects the expanded variety of products and the broadened technical capabilities of this division in recent years," Mr. Jones said. "The Radioplane name dates from the days when, as a small independent company, Radioplane pioneered radio-controlled aircraft for target and other purposes. Since its acquisition by Northrop, Radioplane has not only been a leading producer of target drones and missiles, it has extended its activities into numerous space, paradyamics and scientific fields," Mr. Jones stated.

Northrop-Ventura will continue to devote a substantial portion of its engineering and manufacturing effort to the design, development and production of high performance drone aircraft and missiles, according to George Douglas, Northrop vice-president and general manager of the division.

The new name — Northrop-Ventura — was suggested by the location of the multimillion dollar science and manufacturing center being constructed for the division at Rancho Conejo in Ventura County, California. All division activities now housed in 12 buildings at Van Nuys will be moved.

The move to the Rancho Conejo facility is scheduled for December 1962.

a one package firing control and the missile combination.

Plans call for the MMRBM to have a further flexibility, to be pre-aimed, so that once pointed at its fixed target it can be moved around without being redirected.

The Tactical Air Command (TAC) would, of course, be the prime user.

The Navy also might use the missile for seaborne purposes and will participate in development planning.

## Air Force to Hatch a New Bird—MMRBM

**WASHINGTON (AFNS)** — The Air Force has been given the go-ahead by Department of Defense to develop a new, second generation missile for shorter range "theater" missions.

Its name—Mobile Mid-Range Ballistic Missile (MMRBM) — suggests refinements of the roles currently filled by some "air-breathing" missiles and first generation liquid fuel rockets that have gone by the name, Intermediate Range Ballistic Missile (IRBM).

The shift in names indicates a refinement of the missile art more than anything else. The MMRBM is expected to exceed the IRBM

## Buy Savings Bonds

in range but is designed by definition for lesser distance than Intercontinental Ballistic Missiles (ICBM).

The new "bird" is still in the "egg" phase. In other words, USAF is asking industry to take on the development job. But there are firm indications that such an "egg" could sprout feathers quickly and be out of the nest fairly soon. For one thing, the new missile will draw upon previous lessons learned in the cancelled Mobile Minuteman program. For another, the solid-fuel Minuteman set all records in its speed from development to operational status.

While Air Force thinking is not definitely set, our experts believe the bird will be a solid-fuel, two stage missile that can be carted around on the highway in

**Northrop-Norair News**

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PUBLICATION

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NORAIR DIVISION

CHARLES BRADFORD, Editor

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## RIDES WANTED

7:30 a.m. — 4:15 p.m.

ALAMEDA & CARSON, Long Beach.  
PAT SMITTLE, ext. 672, TE 4-9205. 3

8 a.m. — 4:45 p.m.

ALONDRA & SANTA ANA FRWY., La  
Mirada, WES WILLIAMS, ext. 1559, LA  
1-2073. 5

## RIDES OFFERED

7:30 a.m. — 4:15 p.m.

ALAMEDA & CARSON, Long Beach.  
PAT SMITTLE, ext. 672, TE 4-9205. 13

8 a.m. — 4:45 p.m.

ALONDRA & SANTA ANA FRWY., La  
Mirada, WES WILLIAMS, ext. 1559, LA  
1-2073. 15

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

BICYCLES, 2, girl's, 26", balloon tires. \$9 ea.; toy wagon, large, \$4; record changer, 78 rpm, w/20 watt amplifier, 12" speaker & cabinet. \$10. DA 3-7781.

SKINDIVING EQUIPMENT, jacket for wet suit, mask, fins, snorkel & 12-lb. weight belt. \$25. OS 6-3501. A

RUGS, 9'x12', green nylon, \$20; 11'x14', hemp, 12 squares, \$30; 2 woven basket chairs, wrought iron legs, \$10; toaster, \$10; car cooler, \$12. VE 7-5688. A

PIANO, upright, Lafarac cabinet and reconditioned recently. \$175. FR 5-4314.

HOUSE, 2-bdrm. & den, 2 baths, fireplace, sliding glass doors, detached garage, in Hollywood, \$23,500. DA 3-4469. A

HI FI EQUIPMENT, audio empire 10R stereo cartridge, \$20; speakers, A.E.S. Giants, w/encl., \$20 pr. AX 2-4007.

## NRC

Gem and Mineral Presents  
*Springtime  
in  
Gems*

Product Display Building  
**March 24, 25**

SKI BOOTS, lady's, size 7, hand-lasted, made in Switzerland. \$30. 378-7076.

PUPPIES, mixed breed, med. size, \$3. FR 1-8590. A

WASHING MACHINE, Kenmore, \$10. DA 4-3964. A

FORD ENG., & transmission, 1947, \$30. OS 6-3592. A

RING, man's, white-gold, 11 perfectly cut diamonds, equivalent to 2 carats. \$1000. GE 9-0658. A

DINING ROOM SET, mahogany drop-leaf table, 4 ladder back chairs, \$45; typewriter, portable, Royal, w/engineering keyboard symbols, \$35. FR 7-2463.

UMBRELLA TENT, 8'x10', corner pole, 1-yr-old, \$35; spinning pole, \$10; deep sea pole, \$10; 3 reels, \$2.50 ea. DA 6-4235. A

PLAYHOUSE, child's, pink & white, 6'x6', Dutch door, linoleum floor, per board interior walls. \$49.50. FR 7-3858.

CHEVROLET, Belair, 1956, 4-dr., hdtb., automatic & power equip., \$575. OR 1-5267. A

ACCORDION, 120-bass, for beginner. \$100. OS 6-8331. A

TRAILER AWNING, 48'x8', w/alum poles. \$150. TA 7-0711. A

HOUSEHOLD FURNISHINGS, coffee table, end tables w/formica tops, \$30; washing machine, Kenmore, wringer-type. \$30. OS 9-4245. A

BABY EQUIPMENT, bassinet, \$15; bathnet. \$15; Tenda, \$10; car bed, \$5. OS 5-7311. A

REVOLVER, .22 cal. frontier model, kit, target-type. \$20. FR 8-1732. A

PLYMOUTH, sedan, 1956, 1-owner, \$525. OS 6-3090. A

OLDS, 1953, 4-dr., r/h, new tires & brakes, \$275; wheelchair, Everest & Jennings adult size. \$75. OS 6-3589.

BICYCLE, Allegro, 10-spd., w/access., cost \$200. \$100. WE 4-5843. A

STEREO TUNER, Arkay ST-11, adapted for multiplex, \$45. EX 1-4860. A

MERCURY MONTCLAIR, 1955, r/h, w/w, Olds 4 throat carb., \$350. NO 5-2046.

SHOPSMITH, w/attachments, \$150. PL 9-2655. A

HOUSEHOLD FURNISHINGS, bedroom set, girl's, 5-pc., w/mattress & springs. \$30; crib, Bambie Babyline, w/mattress & playpen, car bed, \$25; hair dryer, professional home-type, \$10. OS 5-8025.

STOVE, apt-size, aas, \$10. DA 6-6214.

BICYCLE, 10-spd., Derailleur, 1-yr-old, Raleigh Grand Prix, w/water bottles & large bag. \$70. OR 1-0597. A

FORD, 1952, automatic, 4-dr. sedan, r/h, good transportation car, \$165. PL 5-2723. A

HOLLYWOOD BED, \$7. PL 7-2753. A

HOUSEHOLD FURNISHINGS, bunk beds & mattresses, Trundle, \$25; sectional, 4-pc., black; coffee table, marbleized top, \$150; dining set, Virtue Bros., modern-style, grey-black formica, 6 matching chairs, turquoise seats, \$100; bar, 7', rattan, portable-type, 4 matching chairs, birch formica top. FR 7-3487.

HOUSE, 2-bdrm., stucco, hardwood floors, tile kitchen & bath, thermo floor furnace. \$14,500. OS 5-9054. A

CAMERA, Wollensak stereo-type, w/case & filters. \$90. OS 6-3448. A

WASHER & DRYER, 220 V. Westinghouse, \$75; range, elec., Westinghouse, double oven, timer. \$50. OS 5-2043.

BOAT, 14', Glaspar, Mercury Mark 25 ena, elec. starter, windshield steering, deluxe trailer, extra equip., \$650. DU 4-4017. A

MANIFOLDS, 1-pr., cast iron, marine-type, for Chev. Corvette ena. \$40. DA 6-9367. A

IMPALA V-8, 1958 convertible, silver blue, p/steering & brakes, w/w, 30,000 miles, 1 owner, \$1000 plus license fee. GR 2-4449. A

VENETIAN BLINDS, steel, 27 1/4"x48", 2, \$2 ea.; 39 1/4"x48", 2, \$3 ea.; 51"x48", \$3, 81"x48", \$5. IO 6-1546. A

CHEVROLET Belair, 1957, 2-dr. sedan, auto, trans., power brakes, tinted glass, \$1000 or \$300 & take over pymts. FR 6-2110. A

PIANO, Howard, upright, w/bench, \$100. OR 7-6204. A

REFRIGERATOR, 9 cu. ft., GE, \$25. OS 5-3076. A

## FOR TRADE

8 1/2 ACRE LEVEL LOT, near Lake Isabella, \$2950 value, trade for car or 4 W.D. pickup, 3/4 or 1 ton. KE 2-1361. C

## RENTALS OFFERED

APT., 2-bdrm., unfurn., 2 children OK, fireplace, fenced yard, no pets, \$90. FR 5-8778. E

HOUSE, 2-bdrm., unfurn., 1 mile from Norair, wall-to-wall carpet, walnut paneling, double attached garage, fenced yard, water, trash pickup & lawn service paid, stove available if desired, available first weekend of March. \$115 mo. OS 6-6108. E

APT., furn., bachelor, 1 blk to ocean, in Manhattan Beach, water paid, \$65. FR 9-4517. E

## PERSONALS

GIRL in 20's to share 1-bdrm. furn apt. w/pool. OS 9-6883. L

OUR DEEP appreciation for the kind thoughts & deeds of Norcrafters during the illness & passing of our wife & mother, Eugenia Kidd. CLARENCE KIDD & JEANNIE LUND. L

SHOTGUNNERS  
HOLD FIRST '62  
TROPHY SHOOT

Norcrafters shotgunners are reminded by Bob Bagby, commissioner, that the NRC Trap and Skeet Club continues to hold its regular biweekly meets at Rancho Angelus Gun Club, 19140 South Main Street in Gardena.

Coming up on February 17 is the first trophy shoot of 1962. There will be a 50 target race comprised of 25 skeet and 25 trap. Trophies will be awarded to winners in classes AA, A, B, C, and D.

NRC BASKETBALL  
TYPES NEEDED  
FOR LEAGUES

Call is still on for basketball players advises Bill Greene, NRC Basketball Club commissioner.

League play is now under way at Leuzinger gym and there are two months of league competition remaining to be played.

"It is easy to join a team," states Bill. "All that is required is a call at Personnel Activities office, fill out an entry form, and start to play."

Practice sessions are scheduled Saturdays from 10:30 a.m. to 12:30 p.m. at the Leuzinger girl's gym.

## NRC SPONSORS NEW CLUB

A new club is in the making. The NRC "Sea Anglers" are just about to cast their lines into the briny deep, schedule regular series of meetings throughout the year, establish monthly and year-end awards for the prize win-

ning catches, and start a fishing derby especially designed for small boat owners. This is announced by Dave Carney, NRC president.

The first meeting of the Sea Anglers will be held next Tues-

APPLE VALLEY  
NEXT IN LINE  
FOR NRC GOLF

The NRC Golf Club has scheduled the next tournament for Apple Valley Country Club out Victorville way.

Date will be February 17. Starting time is 9 a.m. with a limit of 100 golfers. Green fee is \$5, prize fund 50 cents for a total of \$5.50.

Ken Clayton and Bernie Doyle, golf commissioners, state that entry forms are available at Personnel Activities with signup time now in order.

Starting times are being assigned on a first come, first served basis. It is also advised that NRC golfers who do not have a handicap are required to submit at least six scorecards

BLOODMOBILE TO  
VISIT NORAIR  
FEBRUARY 21

The next visit of the Red Cross mobile blood bank to Norair will be one week hence, Wednesday, February 21. This will be a day shift call.

Organization clerks have donor application forms and the deadline for signup is Monday, February 19.

The bloodmobile will be at the Product Display Building during the hours of 7:30 a.m. to 12:30 p.m. Transportation pick ups will be provided at Plant One lobby, Engineering Science Center lobby, Plant Two main lobby, Crenshaw cafeteria, and Mariposa.

to Personnel Activities prior to the tournament.

Anyone for Lobster, Clams,  
Abalone, Gold Nuggets?

CHUCK ROTH, NRC SKIN DIVING COMMISSIONER

The NRC Skin Diving Club, called the "KELPWORMS," is comprised of approximately 24 members. The group, made up of both Norair and Nortronics ES&E personnel, is about ten years old. Club roster includes men and several women and children who are the families of Norcrafters.

Club activities are such as to satisfy almost any type of underwater enthusiast. Throughout the years the Club has been well represented in numerous competition dives put on by the Underwater Society of America. Most recent notable accomplishment by a member was Lillian Patton who, two years ago, by virtue of firsts in several classification dives went on to win first place in the National Championship Women's Division. A number of members are ardent salt-water aquarium enthusiasts. Instead of spearing their fish they catch them with nets and a suction-type gun called a "slup gun."

Should your fancy be entirely financial you can even find some members who are trying to break Fort Knox by diving for gold with dredges. This usually amounts to a long weekend as most all gold diving is done in Northern California in the Mother Lode country. As yet no member struck it rich but all have returned with some "dust" and lots of wild tales about the "nuggets that got away." Of course, the largest segment is made up of just plain divers who enjoy going out and bringing home a load of abalone or lobster or maybe spearing a large fish.

Presently, we are making arrangements to schedule a competitive dive with a local dive shop club. This will be held off Catalina with trophies being awarded to winners. At least once a month we have a club dive and weather permitting this is made a family outing usually culminating with a fish fry or lobster bake, with fun for all. Last summer two campouts were staged in

Mexico with a large turnout.

A guided tour through "Sports-ways," a leading diving gear manufacturer has been arranged for some future evening.

Trophies or gift certificates are awarded monthly by the NRC to the largest fish taken



CHUCK ROTH

by a novice or experienced diver. Quarterly awards are also given for largest fish in experienced class.

We are in the midst of a membership drive now and hope all who are interested in diving beneath the ocean depths either contact Personnel Activities, extension 2784 or come to our next meeting. We meet at the NRC Clubhouse on the third Monday of each month. There are no dues to pay.

We have some equipment available for members' use and we are more than willing to help beginners along. If you have never been diving before and have the desire to learn, come out and get your feet wet.

This invitation is open to men and women personnel, and their families. If you cannot swim and want to become a side line participant, join us. Your enthusiasm will be appreciated. If you have always wanted to dive but just haven't found the nerve nor time, find both and show up at the next meeting. We'll be looking for you.

day, 7:30 p.m. at the NRC Clubhouse Annex, 241 West 126 Street which is immediately in the rear of the old Clubhouse.

In addition to discussions on policies and programs for the new club, entertainment will be provided for those attending by Frank Hall, skipper of the "Sharp Shooter" who will narrate and show colored slides of fishing. Films of fishing in the Gulf of Lower California will also be shown.

Dave emphasizes that this club is to be a family club therefore all Norcrafters are urged to bring the missus and kids to give the Sea Anglers a right start in the right direction.

INTRACOMPANY  
TENNIS TOURNAMENT

The NRC Tennis Club, John Potts, commissioner, now has its annual intracompany tennis tournament under way.

Matches are being played at El Camino and will continue for approximately six weeks. Norcrafters who would like to attend or participate if openings are still available are asked to contact Personnel Activities.

BURTON TAKES  
LOW NET IN NRC  
"RAIN" MATCH

Bing Crosby's weather problems at Pebble Beach had nothing on the NRC Golf Club.

However, results of the NRC "rain" tournament at Ojai are now in and all the winners are accounted for.

Overall low gross went to L. T. Burton with a 77. Overall low net was a tie between Myron Baker and Ed Stone with a 70.

First flight winner was Max Tennigkeit with a 71. The second flight belongs to Bob Sanders with a 73. Joe Horst and Ed DeWald tied for third flight honors with 76. Howard Weller won the fourth flight with a 72.

Golf balls were awarded for win, place, and show.

Refunds are  
Due from  
State Tax

The California State Department of Employment advises that 1961 disability insurance refunds are now available.

Persons are entitled to claim a refund if they worked for two or more employers during 1961 and (1) received more than \$3600 in wages during the year for work in California, (2) had deductions for disability insurance (either State or voluntary plan) taken from their wages, (3) the total of such deduction exceeded \$36.

Deduction can be claimed if all the foregoing conditions apply.

Application forms (DE 1964) are now available from Norair Personnel Activities and Services offices and Central Office of the Department of Employment, 800 Capitol Avenue, Sacramento 14.

Information concerning pay deductions, wages, and other data necessary to complete a claim may be secured from copies of stubs of paychecks in your possession or from your employers.

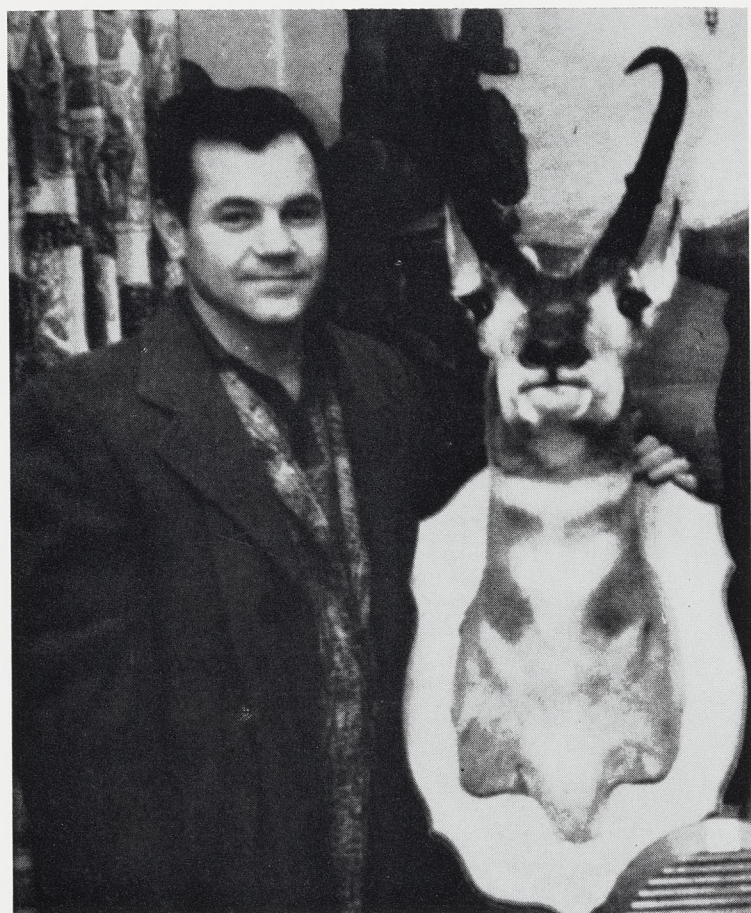
Claims have to be filed during the period January 1 through July 2, 1962.



## T-2 Norcrafters Bag Fine Trophies

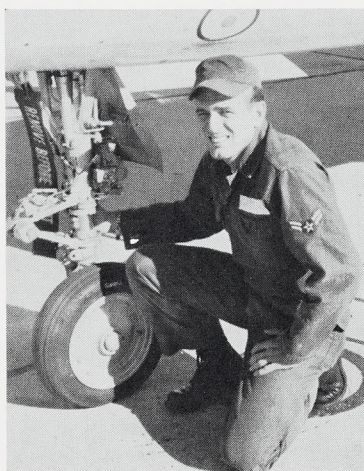


**GOOD HUNTING IN SOUTH DAKOTA**—T-2 Norcrafter Gun Club members appear on Rapid City's KOTA television station to receive NRC awards for their hunting season trophies. One head proved to be a state record. From left, J. V. Maruska, installation specialist; D. D. Shanks, engineering technician supervisor—record and first place for antelope; J. E. Conrad, master scheduler—first place for deer; W. McMasters, senior liaison engineer; and Don Oldfield, senior manufacturing planner. Note bobcat trophies. Photos were sent to News by Virg Maniago.



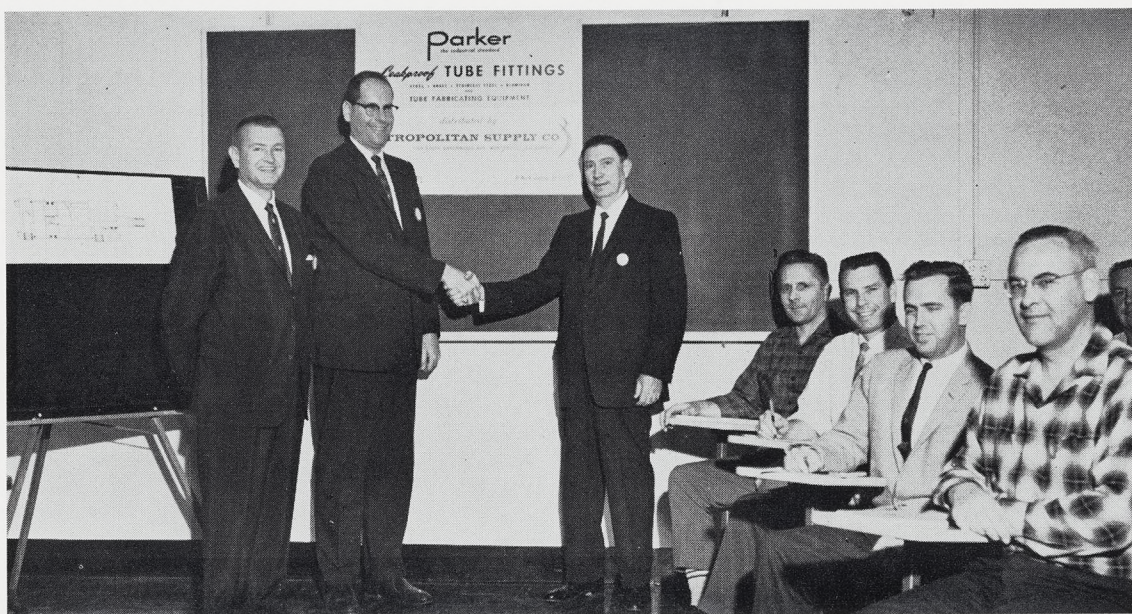
**THE FINEST**—D. D. Shanks is making a bid for the national record with his antelope. It has already proved to be the largest in South Dakota state annals. Says Virg Maniago, "Hunting was wonderful this season." Photos were reproduced from Polaroid shots.

## No Write-ups



**FORTY-TWO**—Webb Crew Chief Airman/IC Edward Laugenslager has set record with his airplane, Talon 60-591. This T-38 went 42 consecutive flights without a write-up. Flights took place in November and December.

## Training Lectures



**HYDRAULIC-PNEUMATIC TRAINING**—Industrial Training Supervisor C. Z. Stine, congratulates Frank Schillinger and Dale Thompson, representatives of Parker Hannefin Corporation on a job well done upon completion of their hydraulic-pneumatic lecture series. Sponsored by Industrial Training this series was one phase of a continuing program that is designed to present current state-of-the-art information available from manufacturers and vendors to Norair personnel. From left, seated, are Norcrafters Quentin Rinde, B. G. Smotherman, E. J. Starner, and Frank Kassebaum.



## Ready, Willing and "Able"

**ALL SET TO TEACH**—Eight instructor pilots (standing), members of Class "A", have completed a six-week T-38 instructor pilot course. The eight along with six others in Class "B" began their training in December. Kneeling, from left, are the instructors: Captain Ivan D. Appleby, Captain Val G. Nelson, Captain Robert C. Hogan and Captain A. G. Boughton. Standing from left, are Lieutenant Stewart D. Howerter, Lieutenant Robert L. Ladd, Lieutenant Kurt Roeloffs, Lieutenant Louis M. Rabin, Lieutenant Wilbur E. Brown, Captain Ronald E. Ballow, Captain Ronald E. Storz and Lieutenant Robert Sandner. Appleby and Ballow are men of night landing fame.

Fourteen Webb AFB instructor pilots have completed a six-week T-38 instructor pilot course. The 14, part of 78 instructors who will eventually be trained began flights December 4.

Instructions in flying the Talon were given on formation, contact, instrument and navigation. Instructor pilots also had three hours of night transition and formation flying.

Forty-four of the 79 course hours were devoted to academic training. Instructions were given in physiological training, instrument procedure and radio aids, aircraft engineering, aerodynamics and flight planning.

The T-38 instructor pilot training course is under the direction of Captain Robert F. Daley, T-38 operations officer.

Captain Daley said that the squadron commanders chose the first 14 to attend and that eventually 78 instructors would go through the course.

He added that a good portion of thanks should go to the Main-

tenance and Supply Group for their support in the instructor pilot program.

Assisting Captain Daley were A Flight Commander Captain



**CAPTAIN ROBERT F. DALEY**

Val G. Nelson, and B Flight Commander Captain James B. Chestnut.

Instructors were Captain Robert C. Hogan, Captain Alvin G. Boughton, Captain Howard Austin, Captain John Bodak and First Lieutenant David A. Hettinger.



## Talon "Baker" Flight is Go

**ALSO READY TO TEACH**—Six instructor pilots stand in front of T-38 Talon after completing a six-week instructor pilot course. These six are members of Flight "B" that also began training in December. Instructors in front, Captain James B. Chestnut and Lieutenant David Hettinger. Captain Howard D. Austin, instructor was not present. Standing are the instructors-to-be (from left), Lieutenant Hayes R. Bryan, Lieutenant Lawrence L. Patton, Lieutenant John M. Wilson, Captain Jacob B. Eicher, Captain Charles Semler and Lieutenant Robert F. Wray.





## TALON TOPS TIME-TO-CLIMB

### MAJOR DANIEL ROARS TO FOUR NEW RECORDS

An Air Force T-38 supersonic trainer streaked to four new international time-to-climb records last week.

Piloted by Major Walter Daniel, 36, of Oklahoma City, the twin-jet Talon scorched through the 3000, 6000, 9000 and 12,000-meter altitude marks faster than any other aircraft has ever climbed from a standing start. The Northrop T-38 thus passed four marks formerly held by an Air Force F-104 Starfighter.

Major Daniel, a test pilot at the Air Force Flight Test Center, was alone in the two-place trainer in the record-breaking flights at Edwards and at Point Mugu Naval Air Station.

The new records, clocked by National Aeronautics Association

#### RECORD BREAKINGEST

The Talon has smashed 12 international records in the past six months—Major Daniel's four time-to-climb marks plus eight speed, distance, and altitude records set by Jacqueline Cochran last fall.

This without doubt makes a bid for the T-38 to be the record breakingest and hardest airplane to catch in the business.

officials under the internationally-recognized rules of the Federation Aeronautique Internationale in Paris, France:

3000 meters (9843 feet):

35.624 seconds

6000 meters (19,686 feet):

51.429 seconds

9000 meters (29,529 feet):

64.76 seconds

12,000 meters (39,372 feet):

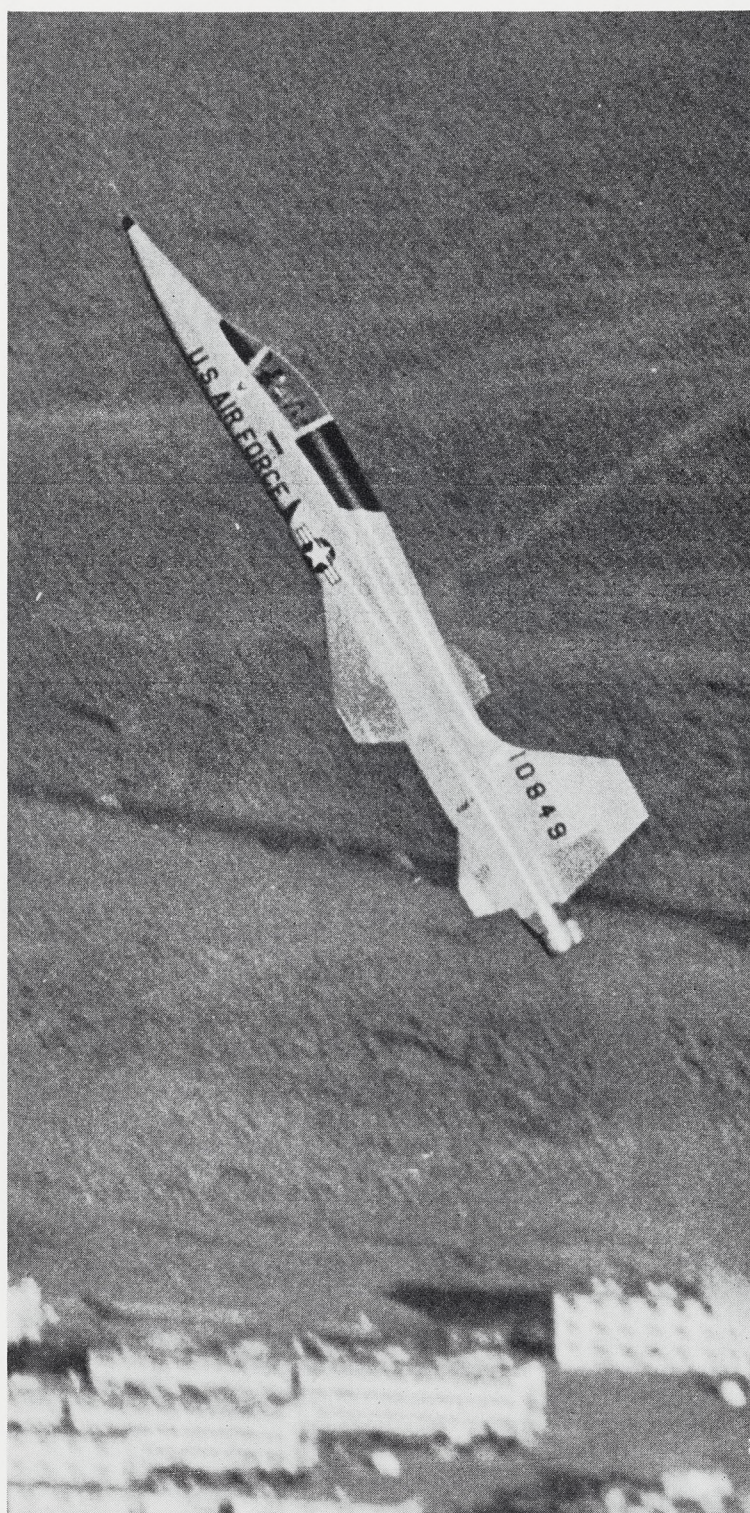
95.74 seconds

The old records, set at Point Mugu by an F-104 in December 1958, were 41.85 seconds, 58.41 seconds, 81.14 seconds, and 99.90 seconds, respectively. The 3000-

meter mark was set by First Lieutenant Einar Enevoldson, and the other three by First Lieutenant William Smith.

To be eligible for the new records under FAI rules, Major Daniel had to better those marks by more than three per cent. His time to 9000 meters (29,529 feet) was 16.38 seconds, or nearly 20 per cent. faster than the previous record.

Sister ship to the T-38 is Norair's N-156 Limited War Fighter. This airplane is now being evaluated for use by our allies in the Military Assistance program.



**FASTEST CLIMBER**—On its way to a world time-to-climb record is this Northrop T-38 supersonic jet trainer piloted by USAF Major Walter F. Daniel.

### Credit Union Declares 5½% Dividend—'61

The Northrop Credit Union board of directors has declared a dividend of 5½ per cent for the calendar year of 1961, it has been announced by Walter T. Gage, treasurer and manager. This is up one per cent from the 4½ per cent declared for 1960.

Credit Union President Bob Willson pointed out that the increase in dividend rate was made possible by greater profits resulting from the board's decision in late 1960 to enter the new field of home improvement loans and to authorize multiple loans. The latter action makes it possible for one person to have a salary loan, an automobile loan and a home improvement loan at the same time.

Officers, directors, and committees for 1962 were also announced.

Board of directors consists of J. R. Willson, president; W. D. Schramm, vice-president; W. T. Gage, secretary-treasurer; C. H. Davis, R. D. Hampton, Leo Richman, and H. R. Watson.

Supervisory committee is composed of R. G. Van Allen, chairman; Don Anderson, and G. E. Cooper.

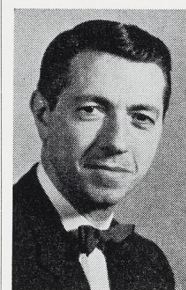
Credit committee is made up of F. E. Wolfe, chairman; J. P. Dickey, and L. W. Monger.

Credit committee alternates consist of R. L. Center, J. M. Cribbs, J. M. Duffy, J. D. Hardman, L. K. Haueter, S. W. Josephson.

J. M. Mountain, F. E. Nelson, John Peck, L. M. Rondot, R. M. Rupkey, V. G. Vanderville, and J. D. Steen.

## NEWS BRIEFS

FROM PARIS—Sal Xifo, Norair engineering representative for Europe, has been in Hawthorne for conferences, briefings, and project status information during the past two weeks. He departed



for Paris last Tuesday with itinerary scheduled by way of ATC, Webb and Randolph Air Force Bases to observe T-38 training programs in action. Sal, wife Lindsey, and four children, ages 8 to 13 years, now 18 months in France, have become seasoned Parisians. The children attend French parochial schools and speak the language fluently. Sal reports that Gina, the youngest, eight years, reads French with ease but has trouble reading English. The Xifo's live in a rented apartment near the Eiffel Tower.

**MANAGEMENT SCIENCE**—Norair Division has scored more cost reduction marks in its aggressive Procurement Management program . . . Increased competitive buying and Corporate materials standardizations have resulted in a savings of 16.2 per cent in purchase of fine paper . . . Travel and Reservations' use of coach accommodations for Company assignments has decreased costs in that area 22.4 per cent. (See Norair News Briefs, 14 February.) Effective T-38 subcontract management involving cooperative action on the part of Engineering, Manufacturing Program Planning, and the use of expanded competitive bidding brought about 40 per cent savings on a high value component. Total savings in these three areas will amount to nearly one quarter million dollars. Norair Materiel is headed by Carl Hood, director.

TO WASHINGTON AND DAYTON—Northrop Corporate Vice-president and Norair General Manager Dick Nolan was in Washington and Dayton last week to meet with military leaders for a series of briefings and presentations on Division management concepts and for discussions on technical and project matters. In Washington accompanied by Tom Mattis, engineering specialist (missiles), Technical, he conferred with officials of Department of Defense, the Air Force, Army, and Navy. In Dayton with L. C. Breckenridge, Norair-Dayton District office representative, he met with commanders of Air Force Logistics Command and Aeronautical Systems Command. He also visited the Air Force Project Offices for the T-38 and Laminar Flow Control.

## T-2 Officials Take Part In Education Ceremonies

Max Fayrweather, manager, and Ken Yost, chief, Program Project office, Norair T-2 site, were guests of Rapid City teachers at the recently staged Business Education Day in that city.

The traditional event, now in its seventh year, was sponsored by the Rapid City Chamber of Commerce in cooperation with the superintendent of schools of both Rapid City and Pennington County.

The day's program consisted

of selections by the glee club and band of Rapid City High School, followed by principal speaker Dr. Ganus, vice-president, Harding College, who spoke on the value of capitalistic system to our way of life.

In the afternoon Rapid City teachers Mike Clemens, Bob Hansen, Mrs. Josephine Killian, and Dorothy Goeken were given an informal presentation on Northrop Corporation operations by Mr. Fayrweather and Mr. Yost.

## Products that Please

(See Pages 2 and 3)



# "... as I see it"

*How can you help to provide a product that pleases the customer?  
Norair Manufacturing supervisors speak on this topic.*

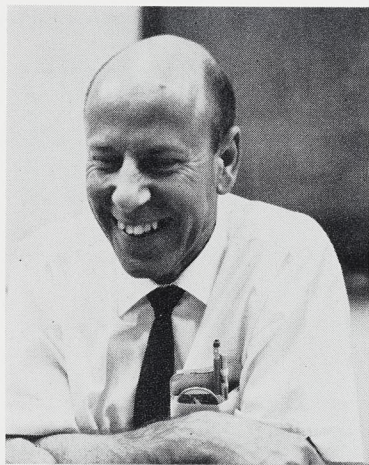
**Rudy Horwat, assistant general foreman, T-38 Fuselage Mate and Complete section**



"If you have a good clean shop, you find that you improve workmanship tremendously. A customer takes great interest in condition of work areas where his products are being manufactured. They seem to know that if things are clean and orderly they will get quality. A clean shop and quality go hand-in-hand. Each man helps by keeping his immediate area clean. This is half the battle. Keeping the entire area clean is a team effort . . . Also we should all make a practice of putting ourselves in the customer's shoes. See things from

his viewpoint. If you are sympathetic to the customer's viewpoint, you will do the best job you can possibly do. After all if the customer is satisfied, this means that you have delivered all he expects. If he is pleased as well as satisfied this means that you have added a valuable something extra that puts your work above all others."

**Ernie McNeil, foreman, Torsion Box area, Boeing 320**



"Efficient production makes for maximum number of articles at minimum cost and this can't but lead to a pleased customer who will bring more contracts. Efficiency benefits always accrue to the buyer as well as the seller, and while you are being efficient, you are building in the quality your customer must have. Norair Division management program provides the tools. AOC, Target Cost, and Supplier symposiums are some of the tools that help us please the customer by controlling costs, cutting down shortages, keeping on schedule, and providing the best

materials . . . A lot of things are important in pleasing a customer, but as I see it, if you have the right attitude, the right equipment, and the right know-how, you have the most important things in hand . . . Another thing is objectivity. Start by being objective and honest in your appraisals of your own work. This goes for driving a rivet or directing a section. Don't be satisfied with anything less than what you think is right."

**Jack Brown, foreman, Machine Operations**

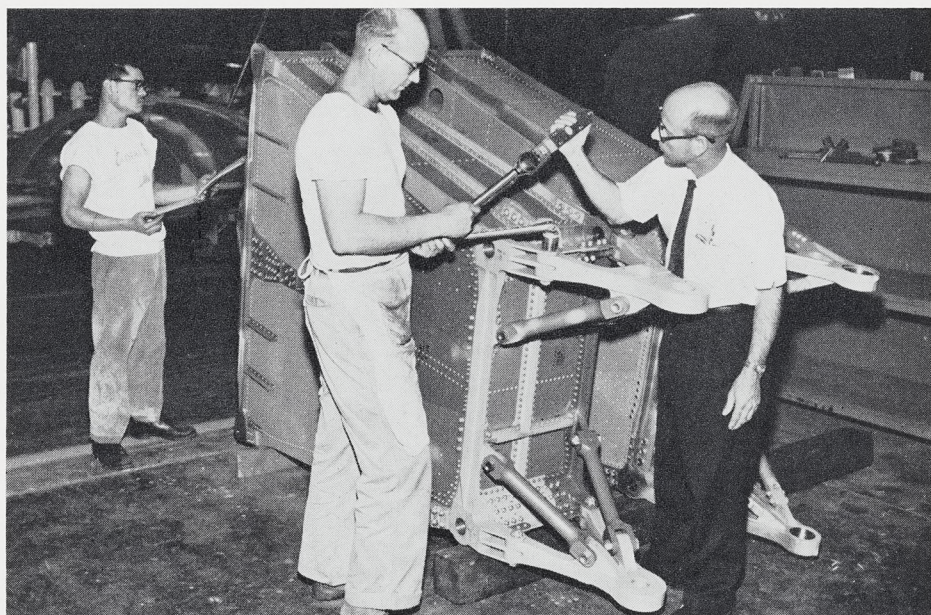


"I think that a continuous upgrading process is necessary to meet today's aerospace requirements. Our work is much more exacting than it used to be. Fine tolerances, exotic metals, complex shapes, tighter schedules. From my viewpoint, we can help by developing the capabilities of new Machine Shop people. Norair has started a different type training program which will accomplish this. The old system was to bring in new men and put them alongside more experienced people. With the new program we put new men in a special area and help them learn our way

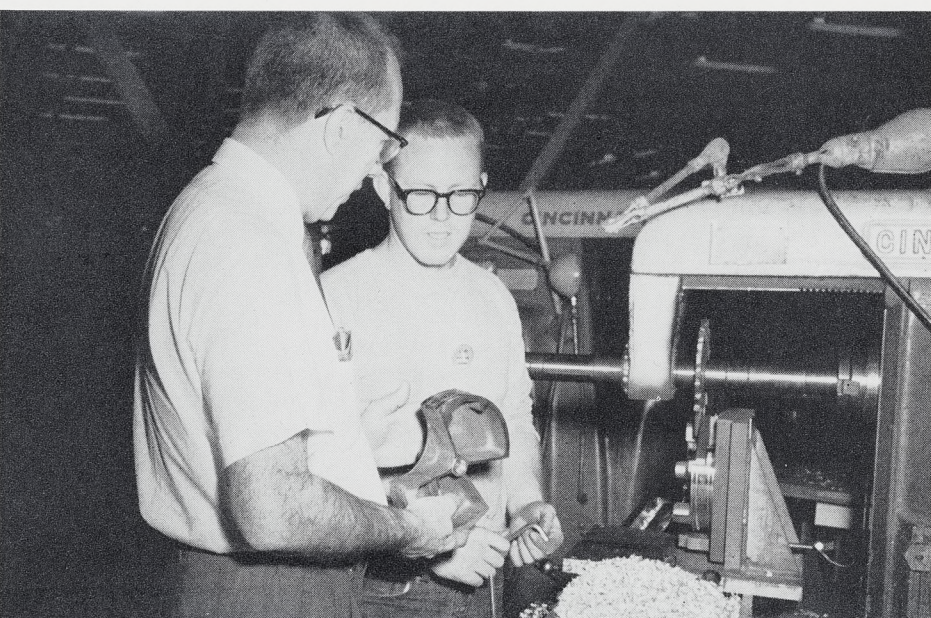
. . . Of course there is no substitute for experience. A man who knows the tricks of aerospace machine work can hold the tolerances. He makes quality parts. That's what we do for the new men. Show them the tricks so they can get that last half thousandth that is so important. What I am saying is, we can help please the customer by turning out quality work, per print, on schedule." (Mr. Brown is on special training assignment to introduce aerospace techniques to newly hired Machine Operations Norcrafters.)



**AFT SECTION** and panel section of T-38 are brought into position by overhead cranes and placed in the big jigs for sew-up operation. Here Mr. Horwat checks progress as Norair Aircraft Mechanics Robert Borjas and George Snider remove clecos and rout rivets. Supersonic Talon's skin must be glass smooth. Vertical stabilizer is at left. Mr. Horwat is a 21-year Norcrafter.



**TORSION BOX**—Highly important structural component of the Boeing 707-320 subcontract gets finishing touches in Mr. McNeil's organization. Bolts must be carefully torqued to specifications and approved by Quality Control to assure that designed-in strength is all there. From left are Structural Mechanics Bill Hunt, Jr., and Dick McGibney. Mr. McNeil is at right. Mr. McNeil is a 20-year man. He started in 1942 on the Boeing Flying Fortress engine nacelle subcontract.



**THE NORAIR WAY**—Mr. Brown explains aerospace milling techniques to new Machine Operations Norcrafter J. R. Plank who is milling grooves in a T-38 horizontal stabilizer quadrant. Norair's machine shop upgrading training program is based on close supervision and personal consultation. Quality and correct tolerances and a pleased customer is the aim. Mr. Brown has had 26½ years in machine work. He learned the trade in the machine tool industry.





← **Rod Smiley, foreman, Rout and Saw**

"Be sure to read the order and template thoroughly. . . . If parts start right here it helps all the way down the line. . . . Many people start their aerospace careers in the rout and saw area. This is the beginning of the experience line. The rules that apply to parts apply to people and attitudes. If you get started right you will do work that you are proud of. The customer will see this in the product." Mr. Smiley is a 20-year Norcrafter.

**D. J. McClarty, foreman, Boattail section**

"I would say the best way that we can help please the customer in this area is by taking a positive approach to the work as it comes through. A positive approach helps make a better product in that it encourages taking a good look with a critical eye at methods. We practice what we preach. In two months time we have reduced our "write-up" per article by 70 per cent and we are not satisfied yet." Mr. McClarty has had 28 years in the aerospace business.



**John Warner, foreman, Boeing Wing Line, Plant Four**



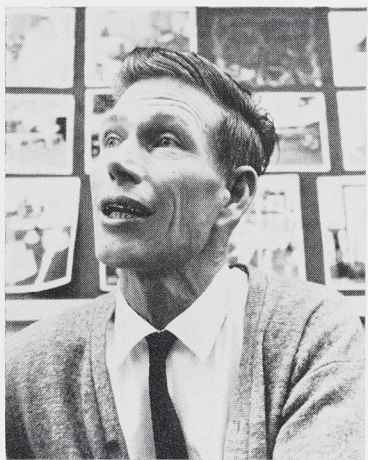
"Pleasing the customer can best be accomplished if all the little things are taken care of. My motto is to catch errors before they leave this area. If the job is correct the first time it eliminates rework and constant trouble as the units progress down the line. Each mechanic should be his own 'inspector' and check his work before calling Quality Control . . . Norair production jobs are designed in the team concept and if the entire crew works as a team this naturally makes for better, more pleasing hardware . . . Supervision can help by placing each man where his talents and

attributes are best fitted. Stout men shouldn't work in close quarters. Tall men should not work where headroom is restricted. Short men, by the same token, should not be reaching for what a tall man would find at a normal level. These are little things but they are mighty important."



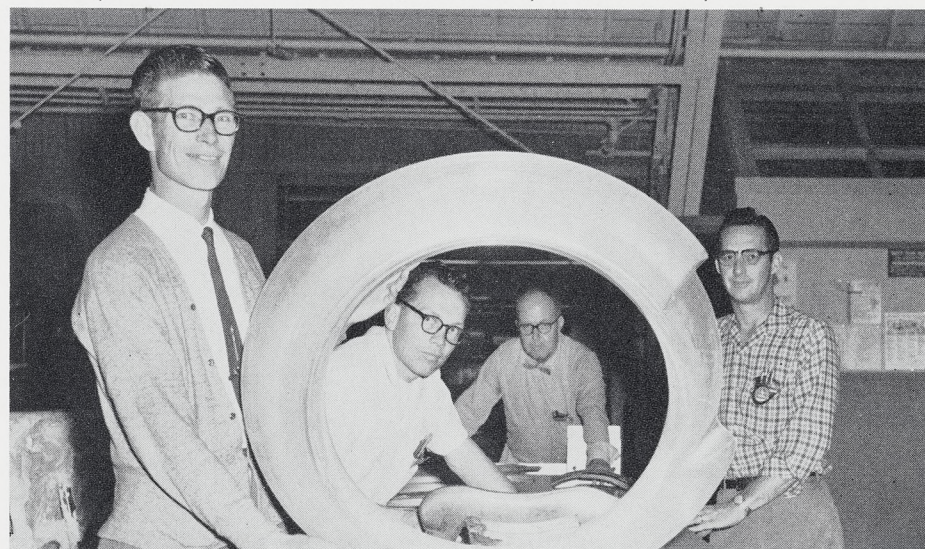
**CHECKING THE PRINT**—Mr. Warner checks the print against a new Boeing 320 outer wing as it nears completion in the Plant Four line. With him are Aircraft Mechanic Ralph Tindall and Quality Mechanic Floyd Dean. Mr. Warner has had 20 years in aerospace.

**Vern Hutchinson, foreman, Advanced Production, nights**



"Advanced Production is a focal point of customer interest for this is where the first article is usually completed. I think we should produce a first article that is in all ways equal in quality to a production article even though we might make only one. If the first article pleases the customer it is certain to be a great help in obtaining a contract. To go with this, I think it is important that we dress neatly and in good taste and in the best traditions of the aerospace business . . . Also, in Advanced Production a clean shop is very important . . . We should keep faith with

schedules and get parts through in the least time span possible. Above all, show the customer that we regard his product with high importance."



**ADVANCED PRODUCTION**—Mr. Hutchinson and Norair Mechanics John Freeman, Bill Martin, and John LaVelle are photoed with first article parts that are typical of their operation. Advanced Production at Norair is called on to build a wide variety of products. They cut the roof sections for the schoolhouse project. The ring display is an engine inlet duct lip for Laminar Flow Control. Mr. Hutchinson is a 12-year Norcrafter.

**Pat Garrett, foreman, Metal Fitting and Welding**



"Pride in workmanship is one of the most important factors . . . In welding, each weldor's bead is his signature and as with an artist you don't sign your name to something that isn't your best effort . . . Every job in the beginning poses a problem and we must solve these problems and this takes capability and stick-to-itiveness. Often the best way to correct a problem is to go right to the airplane so that we can see what is required. If we can see the part in action this helps a great deal. If we still can't lick the problem we call in a welding engineer. Never give up until you are doing

a perfect job . . . Good housekeeping is very important to doing a good job . . . Untidiness creates confusion and confusion creates errors; one of the surest ways to dissatisfy customers."



**"A WELDOR'S BEAD IS HIS (HER) SIGNATURE"**—Mr. Garrett and Norair Heliarc Welder Gracie Lahmeyer discuss work being performed on Boeing ducts. Gracie has 20 years experience. Mr. Garrett is a 21-year Norcrafter.





## RIDES WANTED

7 a.m. — 3:45 p.m.

COMPTON &amp; NORMANDIE, Gardena. Morning only. Mary Kina, DA 9-4762. 2

AVIATION &amp; REDONDO BEACH BLVD., Manhattan Beach. Elizabeth A. James, ext. 2076. FR 2-4762. 2

WESTERN AVE. &amp; 247TH, Lomita. J. D. Smith, ext. 2327. DA 5-2280. 2

REDONDO BEACH BLVD. &amp; RINDGE WAY, Redondo Beach, Sol Conditte, ext. 1912. 376-5543. 2

7:30 a.m. — 4:15 p.m.

ORANGE &amp; DEL AMO, Long Beach, Gail Stroh, ext. 425. GA 2-9321. 3

TORRANCE BLVD. &amp; HAWTHORNE BLVD., Torrance. Adelaide Fox, ext. 1910. FR 1-7161. 3

WESTERN &amp; LA PALMA, Buena Park. George Smith, ext. 2069. LA 2-3697. 3

WOODRUFF AVE. &amp; SOUTH ST., Lakewood. J. S. Greenough, ext. 1401. TO 6-5703. 3

8 a.m. — 4:45 p.m.

CARSON &amp; CHERRY AVE., Long Beach. R. P. Barbara, ext. 2123. GA 7-6097. 5

ANZA &amp; 135TH OR INGLEWOOD AVE &amp; 135TH, Hawthorne. Ross Konaable, ext. 1835. OS 6-8113. 5

## RIDES OFFERED

7 a.m. — 3:45 p.m.

REDONDO BEACH BLVD. &amp; RINDGE WAY, Redondo Beach, Sol Conditte, ext. 1912. 376-5543. 12

7:30 a.m. — 4:15 p.m.

WESTERN &amp; LA PALMA, Buena Park. George Smith, ext. 2069. LA 2-3697. 13

WOODRUFF AVE. &amp; SOUTH ST., Lakewood. J. S. Greenough, ext. 1401. TO 6-5703. 13

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

CADILLAC, 1953, conv., new top, leather upholstery, newly painted, \$250. GE 1-7888. A

APT. BLDG., 5-unit, Western &amp; 208 St. reasonable down or will accept trust deed as part payment, property in good condition, w/ moderate income, \$31,900 FR 5-2866. A

SPANISH GUITAR, concert size, case &amp; extra strings, \$47.50. Box 5001. A

TUBELESS TIRES, 4, w/w, 8.00x14, Firestone, \$30. FA 0-2512. A

PLYMOUTH, 1950, station wagon, all metal body, fair running cond., good surf wagon, \$100. PL 4-4908. A

RENAULT DAUPHINE, 1959, \$550. OR 2-8141. A

CORVAIR MONZA, 1962, fully equip., license paid, \$2295. FR 6-6142. A

MERCURY, 1953, hd/top, light blue, white top, new paint, Durabuilt eng., new tires, overdrive, \$400. FR 7-3487. A

STOVE, aas, 4-burner, automatic timer on oven, \$75; rug, green, wool frieze 12x15, \$100; radio, AM, Heathkit, \$10; deep-fryer, automatic heat control, aluminum, \$3. OS 5-2005. A

ALL-BAND EXCITER, 80-10 meters, push-pull 807w's in final, extremely stable VFO, \$50. FR 7-1037. A

BROILER, elec., Broilquick, \$15; dresser, 3-drawer, walnut, \$20; occasional chair, walnut frame, \$5; table, kitchen utility, castor-tops, \$3. FR 5-2775. A

PLYMOUTH, 1952, 6-cyl., stick-shift, overdrive, \$195. OS 9-6830. A

DINETTE SET, grey chrome, drop leaf table &amp; 2 chairs, \$25. FA 0-2862. A

PLATFORM ROCKER, rose &amp; black tweed, \$10. DA 4-7843. A

WASHER-DRYER combination, Easy, 220 V outlet, 5-yr-old, \$50; ironer, Conlon, 3 1/2-yr-old, \$20 or both, \$65. DA 9-9180. A

HO TRAIN LAYOUT, 5x9 board retracts to ceiling, 22-pc., partially landscaped, \$125. DA 3-1026. A

ACCORDION, 120-bass, beginner's, \$100. OS 6-8331. A

ELECTRONIC ORGAN, Lowrey, 2-manual, \$750. FR 5-3257. A

SHOES, baseball-type, little &amp; middle league, size 8 &amp; 10, \$5 pr.; manale, Easy, lae, size, \$35. OS 6-3110. A

FREEZER, Amana, 1961, 20 cu. ft., equity free, \$411 or take over pymt. of \$29.40. PL 6-9775. A

## FOR SALE

FORD, 6, station wagon, 1957, 9-pass., stick, r/h, new tires, \$750. 371-0953. A

BAIT TANK, Fiberglass, 30-qal. capac., unused, hardware, \$25. DA 9-2371. A

COUCH & CHAIR, \$25; small desk, \$5; TV, reconditioned, RCA, 21", \$60. FR 6-4276. A

VOLVO, 1958, 2-dr., good condition, low mileage, 1 owner, \$975. PL 4-7379. A

## WANTED TO BUY

RATTAN FURNITURE, couch, chair, bar, end tables & lamp, OS 5-8772. B

VEGETABLE JUICE EXTRACTOR, OR 7-5080. B

## RENTALS OFFERED

HOUSE, 2-bdrm., in Hawthorne, 2 miles from Northrop, carpet, large lot, children OK, \$120 mo. OS 5-2043. E

HOUSES, 2, 2-bdrm., unfurn., new paint, modern, aarbaae disp., w/aarbaae, water & lawn service pd., 2 children OK, no pets, vicinity Rosecrans & Prairie, \$100 & \$105. OS 6-8768. E

APT., deluxe, 2-bdrm., large rooms, large closets, disposal, 4 short blocks to Northrop, \$95 mo. OS 6-1574. E

APT, 1-bdrm., w/w carpet, drapes, built-ins, 1/2 mile from Norair, \$80. OS 6-8816. E

DUPLEX, 1-bdrm., unfurn., hardwood floors, child OK, water & trash pd., aarbaae disposal, drapes, \$70 mo. OS 5-4285. E

HOUSE, 2-bdrm., unfurn., 1 mile from Norair, fenced yard, hardwood floors, water & trash pickup pd., stove available, \$95 mo. OS 6-6108. E

APT., 2-bdrm., unfurn., Hermosa Beach, 2 children OK, fireplace, fenced yard, no pets, \$90. FR 5-8778. E

## PERSONALS

SINCERE appreciation to all our friends for their kindness & sympathy. CLIFF PETERSON & DAUGHTERS. L

HOUSEKEEPING position wanted, woman, 37 years old, will live in 5 days a week, children, invalids OK, experienced, references. Box 5002.

## INGLEWOOD HIGH CLASS OF 1952 HOLDS REUNION

Inglewood High School alumni, class of '52, are advised that a ten-year reunion will be held Saturday, April 7 at the Pen and Quill Restaurant.

Social hour starts at 7 p.m. Dinner is at 8 and dancing from 9:30 on. Music will be furnished by Leon Guide and his orchestra.

Tickets which are priced at \$4 for dinner and \$1 for admission, for a total of \$5, are available through Don Greco, Personnel Activities.

Pen and Quill Restaurant is located at 3421 Sepulveda Boulevard in Manhattan Beach.

## NRC ART CLUB STARTS NOVICE TRAINING

The NRC Art Club, Stewart Luce, commissioner, has announced that formal art instruction is now being offered at the weekly meetings.

This is a good opportunity, says Stewart, for Norcrafters to learn the fundamentals and to increase their technique in all drawing categories. The instruction is scheduled to begin at the March 6 meeting and will continue indefinitely.

Art Club meetings are held on Thursdays from 7 to 10 p.m. at Joe Kalina's Studio, 2224 West 157 Street, Gardena.

## BOWLERS GET SET FOR SUMMER LEAGUE PLAY

The NRC summer bowling leagues are just around the corner.

Norair Commissioners Bill Myerson and Corinne Davis say that all Norcrafters who want to bowl will find entry forms waiting for them at Personnel Activities.

## "SPRINGTIME IN GEMS" NEXT

The third annual show of the NRC Gem and Mineral Club will be presented at the Product Dis-

## BOY SCOUTS TO SELL TICKETS TO TRAVEL SHOW

The Boy Scouts of America are selling tickets to the Sports Vacation and Travel Show to be staged March 2 to 11 at the Los Angeles Sports Arena. This means that the NRC sponsored Troop 262 will be out in force with plenty of tickets.

Price is \$1.50 for adults. One adult ticket admits two children.

Headline event for local area folk will be the Centinela District's scout display on March 3. This everyone should see.

Tickets for the affair are also available at Personnel Activities. These sales will be credited to 262's account.

play Building on Saturday and Sunday, March 24 and 25. The show, called "Springtime in Gems," will feature hundreds of gems and minerals from the collections of G&M members. Commercial dealers and guest exhibitors will also exhibit.

Highlighting the array will be unique pictures made from stones, creative mosaics, and colored glass. A special set-up will be installed to provide a fluorescent exhibition.

In addition to the displays, there will be working demonstrations of gem cutting and other lapidary skills. Modern lapidary equipment will be explained, demonstrated and operated intermittently.

To put the frosting on the cake, "Springtime in Gems" will feature a variety of chance games with attractive prizes awarded to the lucky winners.

Last year the show drew over 3000 persons.

"Springtime in Gems," scheduled for 10 a.m. through 10 p.m. Saturday and 9 a.m. through 6 p.m. on Sunday, is open to the public.

There is no admission fee. There will be ample parking. There will be a snack bar.

## NRC Folk To Shoot at N-A Range

NRC handgun shooters have been invited by North American's Gun Club to that company's new indoor pistol range, it has been announced by Dick Cade, commissioner.

Dick says the privilege is extended with the understanding that Norair teams will be properly supervised and that trips be scheduled in advance with the North American range master. The range is located at 5353 West Imperial Highway.

There are 10 positions for 25 yard targets. The targets can be wound in by the shooter so that no scope is needed. Incidentally, magnum ammunition is barred.

The range fee is 25 cents; targets are two for 5 cents; 22 ammunition is 75 cents a box; and coffee is 5 cents a cup.

Norcrafters who want to try the new North American range are asked to call Personnel Activities on extension 2784.

## SCORES FOR TOURNEY "BETTY" NOW IN BOOKS

The Ojai golf tourney was played in a hurricane of rain. The Apple Valley edition February 17, was played in a hurricane of wind.

Some of the boys are beginning to use girl's names to keep this season's play in order with tournaments "Alice" and "Betty" already in the books.

The scores at Apple Valley find Leonard Burton top man again with an overall low gross of 75. Low net was a tie between Roy Jackson and Larry Low with 71 each.

Handicap flight winners were first flight, Russ Pease, 73; second flight, Ash Dunning, 74; third flight, a tie between Jack Aungst and Dan Scheick with a 72; fourth flight, Dan Casson, 72; and fifth flight, another tie between Harold Weller and Virgil Grubbs at 73.

A total of 132 golf balls were awarded to the winners.

## Surf Club's Three Divisions—Men, Women, and Children

Of the great number of clubs sponsored by the NRC, the Surf Fishing Club is one of the oldest.

By John Pawlicki  
NRC Surf Fishing  
Commissioner

I believe I can truthfully state also that the club is the largest fishing club of Southern California, if not the largest on the Pacific Coast.

Every employee at Northrop is eligible to become a member and there are no membership dues. We have at present well over 300 members and a great number of associate members. The Club is a family club, with three divisions; namely, the men, women and children participating in the varied activities.

The "soul" purpose of the Surf Fishing Club is sportsmanship, companionship and to encourage the taking of fish from the surf under rules and regulations set up by Club members.

Trophies are awarded at our monthly field meets and yearend trophies to those members with an outstanding performance in the Club. We are members of the Southwest Anglers Association, which recognizes our achievements in record catches. Their awards are buttons for specified weights of certain species in surf, freshwater, and deep sea as well as trophies for record fish for the year.

We have five members with outstanding yearly catches for which the Southwest Anglers have awarded trophies this past year. Awards were made February 23 at the Anglers, Inc. Clubhouse in Inglewood.

Statistics for last year reveal the great number of fish taken at 50 different beaches the Club fished. Estimated weight for the

ties as of now.

The leagues will roll everyday of the week except Friday. Alleys include the Tropicana, Del Mar, Missile and Gardena.

Special note: There is a man's 510 scratch trio due to start the first week in May on Monday, Tuesday, or Wednesday. Those interested should call Personnel Activities without delay.

catches was 5393 pounds consisting of seven species; the barred perch, spotfin croaker, yellowfin croaker, opaleye, fork-tail perch, corbina and butter-mouth perch.

The Club has 23 committees composed of very enthusiastic members and a Club paper published by Personnel Activities with 400 copies monthly for the past 21 months written and composed by E. E. Jones, editor.

It gives me great pleasure and pride to be serving as commissioner for the seventh year with Ralph Steele as assistant commissioner and my wife, Clo, as secretary. Our monthly meetings which feature noted guest speakers and exciting movies are held the first Tuesday of each month, 7:30 p.m. at the NRC Clubhouse Annex with the doors always open to new members.

All Norcrafters are invited to attend, even only now and then fishermen. Members are not only surf fishermen but have been known to drop a hook into the deep sea and occasionally cast a fly into a freshwater stream or lake. Club members and their families enjoy our "camp-outs" at monthly competitive meets held in the early morning at conveniently located beaches. For relaxing, clean outdoor recreation, nothing beats the NRC Surf Fishing Club. Believe me, the benefits are large.



It is stated, fishing is even more than the eternal Fountain of Youth, for an old Assyrian tablet reads, "The Gods do not subtract from the allotted span of men's lives the hours spent in fishing."

## Northrop-Norair News

VOL. 20 NO. 5

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A NORTHROP CORPORATION  
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NORAIR DIVISION

CHARLES BRADFORD, Editor

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# Northrop-Norair News

Issued biweekly by Norair Division of Northrop Corporation

Wednesday, March 14, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, RAPID CITY, EL PASO

## NEWS BRIEFS



**T-38 AT WRIGHT-PATTERSON**—A T-38 airplane with two Division pilots and tech rep crew will be at Wright-Patterson Air Force Base 26 through 30 March, according to L. C. Breckenridge, Norair-Dayton senior representative. The airplane is scheduled for a series of demonstration flights with key military personnel aboard. . . . Mr. Breckenridge has been at Hawthorne during the past week for discussions, briefings and updating on Division plans and projects.

**T-38 PROGRESS**—A steady reduction in the number of flights required by the Air Force in the T-38 acceptance program at Palmdale is contributing materially to the low cost factor, it is revealed by Jack Mannion, manager, Manufacturing and Materiel department. December showed a 10 per cent flight reduction over November. January showed an additional 20 per cent. February showed 22 per cent more for a total flight reduction of 52 per cent for the three-month period. Norair's Palm-

(Continued on Page 2)

## NORTHROP SALES MOUNT FOR FIRST SIX MONTHS

Sales of Northrop Corporation for the six months ended January 31, 1962, amounted to \$157,549,000, up substantially from the \$130,385,000 recorded in the same period a year ago, it is reported by Thomas V. Jones, Northrop president.

Earnings for the six month period were \$3,969,000, compared with \$4,227,000 for the same period last year.

"The fact that earnings did not keep pace with increased sales was due to marketing and development expenditures charged currently but designed to expand the company's growing backlog and enhance its earnings in future years," Mr. Jones said.

The company's backlog reflected a 23 per cent increase, standing at \$341,470,000 at mid-year, as compared with \$276,654,000 a year earlier.

"Marketing and development charges are charged currently," Mr. Jones said, "and only a small amount of deferred development charge is accumulated. These expenditures were principally in the area of sales development and build-up of technical capabilities and are regarded by management as seed money for future growth."

Increased deliveries of T-38 Talon supersonic jet trainers to the U.S. Air Force and increased

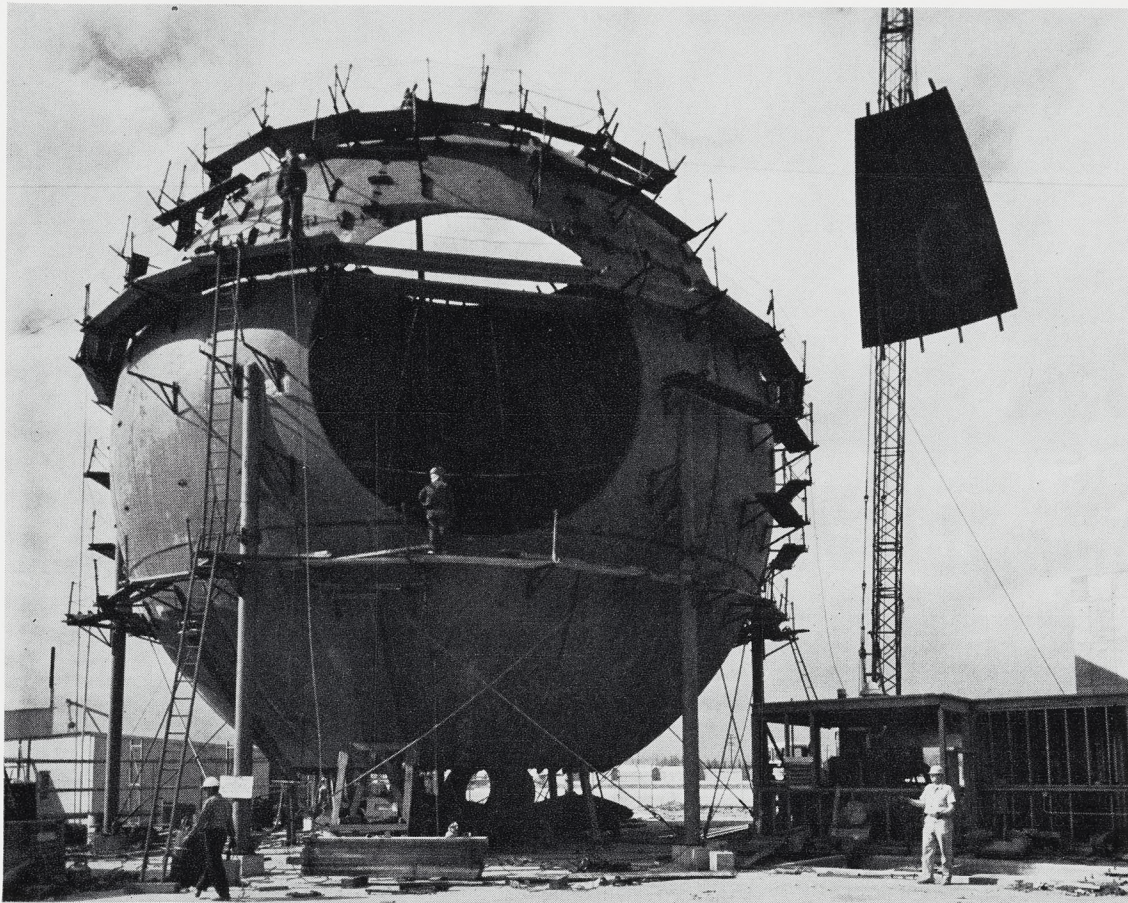
(Continued on Page 2)

## For Time-to-Climb



**IN HONOR OF**—Welko Gasich, Norair vice-president and assistant general manager, Technical, presents trophy to Major Walter Daniel of Edwards for breaking four time-to-climb records in the Talon. (See Northrop-Norair News, February 28.) Ceremony took place at testimonial dinner held in Major Daniel's honor at Antelope Valley Country Club. Unique trophy consists of mounted pen set bracketing the airplane's hold down quick release knob which has been gold plated and enclosed in plastic. Major Daniel and the T-38 established new time-to-climb marks for 3000, 6000, 9000, and 12,000 meters. Flights were made from Edwards and Point Mugu.

## Norair Skyline is Changed



**NORTHROP HYPERSONIC FACILITY**—Giant vacuum sphere, a part of the Hypersonic Facility flow system now looms on the Norair horizon in the wind tunnel area. Photo taken last week shows tall crane lifting steel segment into place. Structure is all electric arc welded. Sphere provides false atmosphere chamber into which hypersonic airflow may discharge under near vacuum conditions. It is equipped with 20-foot door, see opening, and can double as a 60-foot altitude chamber up to simulated 200,000 feet. Shakedown and calibration runs are scheduled in May; actual test work will start in July. Facility will provide tunnel speeds up to Mach 14.

## Management Development Program



**FIRST SESSION**—First session at manager level of the new Norair Management Development program gets under way. Marking the occasion are from left, Bob Lloyd, vice-president and assistant general manager, Operations; Dick Nolan, Corporate vice-president and general manager; UCLA's Dr. Robert Tannenbaum, professor of Personnel Management and Industrial Relations and Dr. Charles Ferguson, head, Department of Conferences and Program Consultation; Dr. Vern Sheblak, chief, Management Development and Industrial Training; and Welko Gasich, vice-president and assistant general manager, Technical. All members of Division management and supervision will take part. Photos and story of director level seminar on Page 4.

## Management Science in Action

(See Page 4)





**HONORS FOR WILLIE BROWN**—Selected for special honors as Technician of the Year by the Los Angeles section, Society for Nondestructive Testing is Quality Control Norcrafter Willie Brown, nondestructive inspector. Photo shows him, second left, just as Boeing representatives complete successful review of Norair's penetrant inspection facility, Plant One. From left are Walt Porter, Boeing resident representative; Mr. Brown; William Hunt, Norair supervisor, Nondestructive Inspection; Dan Martin, Boeing nondestructive testing engineer; and Dan O'Halloran, Norair chief, Quality Control. Willie has had five years experience in nondestructive test inspection.

## Fifty-three Norcrafters Turn 20 years in February

February, although the shortest month in the year, showed over half a hundred Norcrafters receiving their 20-year pins.

Names and seniority dates:

Joseph T. Eagler.....	2- 2-42	John H. Nott.....	2-14-42
William A. Whaley.....	2- 2-42	Joseph H. Ainge.....	2-16-42
James P. McLane.....	2- 4-42	Carl B. Brice.....	2-16-42
Susan J. Buchanan.....	2- 5-42	Herbert L. Kendall.....	2-17-42
Robert H. Chambers.....	2- 5-42	Clifford H. Diltz.....	2-18-42
Ray C. Hansen.....	2- 5-42	Charles Rawlins.....	2-18-42
Kelly A. Burke.....	2- 6-42	Otis F. Wrightsman.....	2-19-42
Glen B. Dawe.....	2- 7-42	Eugene H. Dilley.....	2-20-42
Harold J. Pooler.....	2- 8-42	Charles E. Murray.....	2-20-42
Harry M. Griffith.....	2- 9-42	Edward J. Stephens.....	2-20-42
Ralph W. Gunther.....	2- 9-42	Edward F. Burda.....	2-21-42
Hubert L. Peck.....	2- 9-42	Everett F. Burgmaier.....	2-21-42
James S. Rathbun.....	2- 9-42	Harvey K. Hemmingsen.....	2-21-42
George J. Wallace.....	2- 9-42	Garnet A. Ralston.....	2-21-42
Jack D. Young.....	2- 9-42	Emmett A. Rathbun.....	2-21-42
Clarence L. Sorenson.....	2-11-42	Gertrude R. Smith.....	2-21-42
Carl W. Angeloty.....	2-12-42	Orville R. Brenner.....	2-23-42
Ralph J. Lillegard.....	2-12-42	Myron L. Calkins.....	2-23-42
Ira R. Williams.....	2-12-42	Clarence R. Coursey.....	2-23-42
Ruth E. Williams.....	2-12-42	William B. Patterson.....	2-23-42
Albert M. Gullett.....	2-13-42	James M. Mountain.....	2-24-42
Lawrence J. McNulty.....	2-13-42	Donald C. Riddle.....	2-24-42
Clyde A. Molseed.....	2-14-42	Thomas J. Ames.....	2-25-42
		Frank B. Colombo.....	2-25-42
		Clifford B. Mann.....	2-25-42
		Sally Parker.....	2-26-42
		Glen E. Rollins.....	2-26-42
		Earl M. Rossomme.....	2-26-42
		Alfred E. Wiebers.....	2-26-42
		Robert C. Dubois.....	2-27-42

## Diamond Pins

**TWENTY-YEAR NORCRAFTERS** — Fifty-three Norcrafters received diamond-studded 20-year pins during February. Officiating at the pin presentation ceremony held at the Engineering Science Center was Corporate Vice-president and Norair General Manager Dick Nolan. Mr. Nolan is shown in the center of the group. E. A. "Al" Rathbun, Engineering Liaison, is at Mr. Nolan's right. One hundred years of service represented by five Antelope Valley Norcrafters was a feature of the meeting. They were Carl Brice and Kelly Burke of Edwards; Ira Williams, James McLane, and Clarence Coursey of Palmdale.

## DR. NAUMANN TO HEAD NSL DEVELOPMENT

Dr. Erwin Naumann has been appointed director, Systems Development section for Northrop Space Laboratories, it has been announced by Corporate Senior Vice-president and General Manager Richard E. Horner.

Dr. Naumann, a native of Germany, comes to Northrop from General Dynamics, San Diego.



where for the past two years he has been chief of Thermodynamics and an engineering staff specialist. Prior to this time, 1956 to 1960, he was chief, Advanced Studies and manager of Development at Solar Aircraft. He also served as technical consultant at the Wright Air Development Center at Wright-Patterson from 1947 to 1956.

Dr. Naumann was educated in aeronautical engineering at Technische Hochschule, Muenchen, Germany where he received his doctorate in June of 1943.

Dr. Naumann has published reports on turbine power systems, electrical equipment cooling, unconventional electric power systems and propulsion cycles.

He is a vice-president of the Aerospace Electrical Society.

## NEWS BRIEFS

(Continued from Page 1)

dale facility is under the direction of Tom McCracken, base administrator.



**HOSPITAL PRESIDENT** — Dave Stadler, Norair chief, Personnel and a 20-year Norcrafter, has been elected president of the board of directors for the Hawthorne Community Hospital. Mr. Stadler has been a member of the board for the past four years and will serve as president during calendar year 1962. Installation was held last week at the Cockatoo Inn.

**WSPACS**—A WSPACS policy group meeting was held in Dayton at ASD Headquarters with Major General W. Austin Davis and staff. Attending from Norair were T. L. McCarthy, manager, Administration, as Northrop's policy representative and Lee Ohlinger, director, Information Processing Center as industry leader for the six major aerospace companies participating. Presentation of WSPACS progress—a new technique for scientific Air Force management—was presented by Mr. Ohlinger. WSPACS mathematical model has reached the testing stage and is now ready to be proven out by industry participants. Other aerospace representatives included Boeing, Convair, Douglas, Lockheed, and North American.

**COMPUTER LOOK**—Following the WSPACS Dayton meeting, Mr. Ohlinger was the guest of IBM Corporation on a personally conducted tour of their Research Facilities in Kingston, Yorktown, and Poughkeepsie, New York, where he was given detailed briefings on the latest developments in computing and data processing equipment. Such advance information on the future state-of-the-computer-art enables Northrop's Information Processing Center to adequately plan for equipment vital to support of Company long range activities.

**AMA SEMINAR**—Walt Fellers, director, Norair Long Range Planning, has returned from a series of forecast and planning seminars held under the auspices of American Management Association in New York. Discussion emphasis during the three-day meeting was on procedural techniques in communication and analyzation of customer system requirements data both in the short and long term need. Major aerospace and electronics firms participated.

## Company Earnings

(Continued from Page 1)

activity on several other programs accounted for the rise in sales.

The increase in backlog resulted in part from more than \$100 million in additional funding and new business related to electronics, guidance and ground support equipment systems received in the first six months of the 1961-62 fiscal year. Much of these new orders are related to three of the nation's most important missile programs — the U.S. Air Force's Skybolt air-launched ballistic missile, the U.S. Navy's Polaris Missile System and the U.S. Army's Hawk ground-to-air missile.

Another addition to backlog came from a new order for 144 more T-38 Talon supersonic trainers. This order is in final stages of negotiation with the Air Force. T-38 Talon aircraft are now being produced at a steady rate of 12 a month. The new contract will bring to 357 the total

number on order. Additional orders also have been received for Boeing KC-135, 707 and 720 outer wing panels and aft fuselage units and for additional Laminar Flow Control work.

## AL BINSACCA NEW MANAGEMENT CLUB PRESIDENT

Newly elected Northrop Management Club officers for 1962 are as follows:

President is Al Binsacca, Material Engineering.

Vice-president, Bill Schramm, Spares and Assembly Methods.

Night vice-president is Ray Staley, Sheet Metal Shop.

Secretary, Louis W. Perry, Planning Control.

Treasurer, Fred Rosenthal, Off-site Manufacturing.

Sergeant-at-Arms is John Shanlec, Production Planning.

Photos of the gavel exchange ceremonies with the outgoing officials will be printed in the next issue of the News.







### RIDES WANTED

7:30 a.m. — 4:15 p.m.

HAWTHORNE BLVD. & LENNOX BLVD., Lennox, Carol Taylor, ext. 1708, OR 2-1881.

NORMANDIE & 166TH OR WESTERN & 166TH, Gardena, Carolyn Harrington, ext. 691, DA 9-1768.

MAGNOLIA & KATELLA, Anaheim, Halie Nichols, ext. 713, JA 7-6229.

LA PALMA & HWY. 39, Buena Park, George Smith, ext. 2069, LA 2-3697.

8 a.m. — 4:45 p.m.

VISTA DEL MAR & CENTURY, Playa Del Rey, Sue Burris, ext. 2123, 397-7052.

MANHATTAN BEACH BLVD. & GREVILLEA, Lawndale, Ulna M. Price, ext. 2748, 371-8304.

### RIDES OFFERED

7:30 a.m. — 4:15 p.m.

MAGNOLIA & KATELLA, Anaheim, Halie Nichols, ext. 713, JA 7-6229.

LA PALMA & HWY. 39, Buena Park, George Smith, ext. 2069, LA 2-3697.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

### FOR SALE

CAMERA, Polaroid Land 800, w/flash attach., carrying case, auto. eye & re-take kit, \$70. OR 7-6083.

STEREO CABINETS, 3-pc., limed-oak finish, center cabinet for record player, AM-FM radio & pre-amp., matching speaker cabinets designed for corner placement, \$20; stove, elec., Westinghouse, 3-burners & deep-well cooker, \$25. GE 0-1679.

GUITARS, Gibson elec. stereo w/case & Silvertone amplifier, cost \$550; \$200; Epiphone std., \$35. NO 1-5544.

SHOTGUN, 12-gauge, Savage, cost \$125; \$85. OR 2-1716.

BICYCLE, boy's, 26", J. C. Higgins, lightweight, \$10. OS 6-1018.

BANTY CHICKENS, 6 & rooster, \$1 ea. OS 9-3819.

SHOTGUN, 12-ga., Brownina, over & under, arade 1. 28" bbls., F&M, \$257. NO 4-4513.

JEEP, 1947 civilian model, 4-wheel dr., steel cab, ena. & trans. completely overhauled, tow bar, Warn hubs, truck bed attach., \$875. FR 9-3313 or FA 8-8841.

TRAILER, 1-wheel, Allstate box, 30" deep, \$35. FR 4-8094.

STAUFFER TABLE, deluxe model, w/arm & leg attachments, misc. furniture for rumorms room, \$150. FR 4-2954.

MOTOR SCOOTER, 1961 Lambretta 1600 miles, \$285 or take over payments DU 8-3985.

PUPS, Chihuahua, long hair, \$15. PL 4-9553.

WASHER, Kenmore, wringer-type, w/pump, timer, \$40; braided rug, 6'x9', \$15. OS 9-4982.

MAINLINER TRAILER, 18' aluminum, elec. brakes, new tires, E-Z lift hitch, new license, \$500. DA 5-0994 after 6 p.m.

GUNS, 2 Winchester, .243-cal., Model 70, 4x scope, sling & case, \$150; Winchester, Model 12, 12-ga., solid rib w/case, \$70. TE 3-5590 after 6 p.m.

UMBRELLA TENT, hvy-duty tarps, dacron sleeping bags & air mattresses, camp cot & mattress, 3-burner Coleman stove, lantern, gas can, large freezer chest, chemical cans, hammock, cookware & misc. equip., \$130 or individually. FP 8-4574.

USED FIRE BRICKS, about 75, clean, for fireplace or outdoor barbecue, 20¢ ea. OR 7-4254.

TAPE RECORDER, Revere, T-2200, stereo record & playback, 4-track/2 track, 7½ or 3¼ ips, speaker & misc., \$119; amplifier, EICO, stereo control, 2 speakers, 4 stereo inputs w/MPX, \$45. OR 4-0762.

HOUSE, 3-bdrm., colonial-style, ocean view, 2-car garage, 1½-bath, landscaped, near schools & shopping centers, 5¼% VA loan, \$26,400. TE 3-6157.

IRONER, Kenmore, good condition, \$25. OS 5-2820.

DRAPERY, hand-woven, beige cotton, 40" wide, 1 40-yd. piece, \$120. DA 7-1337.

CHEVROLET IMPALA, convt., 1958, \$1200; Harley Davidson 74, 1949, \$350; refrigerator, Westinghouse, 1956, \$75; Oldsmobile 88, 1956, \$600. FA 8-1973.

### FOR SALE

STEREO MUSIC CENTER, Hoffman, high fidelity AM/FM, walnut, 4-sp, changer, 5 speakers, 70 watt output, \$300. OS 9-2122.

APARTMENT BLDG., 5-unit, near Western Ave. & 208th, will accept trust deed on other property as part of down payment, \$31,900. FR 5-2866.

SECTIONAL, 2-pc., & 2 matching arm chairs, \$50; dinette set, 5-pc., \$25; 3 cane chairs, \$12; 2 basket chairs, \$8; green rug, 9'x12', \$20. VE 7-5688.

FORD FAIRLANE V-8, 1955, 4-dr., Fordomatic, r/h, w/w, 1 owner, very good condition, \$495. NE 1-4462.

MERCURY station wagon, 8-pass., 1954, r/h, power brakes, Mercromatic, new paint, good rubber, \$325. EX 1-7969.

REDWOOD CABIN, 408 sq. ft., & 2½ acres, near Joshua Tree, \$2000 or terms; house trailer, \$50. DA 7-0219.

WASHER, Speed Queen, wringer-type, new belt & hose, \$20. OR 1-4986.

HOLLYWOOD BED, wooden legs, \$7. PL 7-2753.

DINING ROOM SET, 4 brace-back Windsor side chairs & table, mahogany, \$60. FR 8-4910.

### WANTED TO BUY

PUNCH PRESS, small, Benchmaster, PL 6-9775.

DESK, standard-size, 30"x60", metal preferred but will consider wood. FR 7-1037.

TRUCK & CAMPER, not over 2-yrs-old. OS 6-8331.

CEMENT MIXER, either electric motor or gasoline engine power OK. OS 6-7963.

### FREE (to be given away)

GUINEA PIG w/cage & dog, large German Shepherd. DA 7-9084.

### RENTALS OFFERED

APT., large, 2-bdrm., built-ins, disposal, garage, near Northrop, \$110 mo. OS 6-6690.

DUPLEX, 1-bdrm., rear, unfurn., modern, 1 mile from Northrop, \$75 mo. OS 9-4194.

ROOM, w/garage & kitchen privilege, man or woman, walking distance to plant, \$50 mo. OS 6-7957.

HOUSE, w/garage, unfurn., 4 rooms & bath, single unit, near Northrop, no children, \$75 mo. OR 7-5674.

HOUSE, rear, 2-bdrm., unfurn., w/garage, modern, redecorated, garage, disp., water & lawn service pd., 2 children OK, no pets, vicinity Rosecrans & Prairie, \$100. OS 6-8768.

APT., 3 small bdrms., refrigerator & stove, no garage, children OK, Manhattan Beach, 5 blocks from ocean, available 3/23, \$110 mo. PL 6-3245.

APT., unfurn., 1-bdrm., \$75 mo. EA 2-4747.

### PERSONALS

PROFESSIONAL TYPING done in my home. 374-5580.

MASTER BARBER WORK, evenings & Saturdays. OS 9-7230.

### FOR SALE OR TRADE

CHEVROLET PICKUP, 1962, ½-ton, \$2100; take over \$65 mo. payment, trade your car as down payment plus \$27 transfer fee. FA 0-1896.

DODGE SIERRA, 1957, station wagon, 6-pass., r/h, w/w, p/steering & brakes, \$950 or trade for Chevrolet ½-ton p/u. 1957 or newer. FR 1-3781.

## GOLFERS TREK TO GILMAN FOR NEXT TOURNEY

The next NRC golf tourney will be held at Gilman Hot Springs, Saturday, March 24, it is announced by Commissioner Ken Clayton.

Starting time is 7 a.m. with a limit of 100 golfers. Green fees will be \$3.50 plus 50 cents prize fund for a total of \$4.

All those who intend to make a night of it should check in at Personnel Activities for rate schedules and other hotel information.

There will be plenty of golf ball prizes for winners.

## Northrop-Norair News

VOL. 20 NO. 6

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A NORTHROP CORPORATION PUBLICATION

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NORAIR DIVISION

CHARLES BRADFORD, Editor

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# Ready for Springtime in Gems?



**SPRINGTIME IN GEMS**—The NRC Gem and Mineral Club proudly display their new lapidary equipment purchased by the Northrop Recreation Club. From left at the diamond saw are Charles Boyle, supervisor, Personnel Activities and Mike Michels, past G&M officer. In the corner with faceting and other equipment are Frank Matthews, show manager for Springtime in Gems and Sandy Sanders, Nortronics G&M commissioner. Kneeling is Dave Carney, NRC president. In foreground with grinding, buffing and polishing equipment are Ed Bates, lapidary room manager and Dan Kozlow, Norair G&M commissioner. All Norcrafters are invited to bring family and friends to Springtime in Gems, March 24 and 25 at the Product Display Building. Admission is free.

# GADABOUTS SUGGEST DEDUCT PLAN

The NRC Travel Club Gadabouts have added something for the 1962 tour year.

New feature calculated to make participation easier is the suggestion that members initiate weekly payroll deduction savings program with the Northrop Credit Union to take care of finances as required.

Budget-minded Norcrafters can be guided as follows:

Hearst Castle, San Simeon, May 4, 5, and 6. Price is \$35.80

with initial deposit to hold space pegged at \$8. To save remaining funds, deduct \$7 a week for four weeks.

Seattle Century 21 Exposition, June 23 to July 1. Initial deposit is \$49. A deduction of \$20 a week for 10 weeks would take care of the remainder.

The Catalina weekend, September 7, 8, and 9. Price is \$25. Initial deposit is \$5. One dollar a week for 20 weeks.

The Orient tour to Japan and

Hong Kong, November 3 through 25. Total price is \$995. Deposit is \$95. This equals thirty weeks at \$30 a week deduction.

Hawaiian Holiday, December 26 through January 1, \$335 total. Initial deposit is \$30. This would require an easy \$9 a week for 34 weeks.

The Credit Union payroll deduction plan for vacation and travel expenses seems to be an excellent budgetary method. NRC Gadabout trips that already have a high fun factor should have an even higher fun factor under such a plan.

## SANTA FE GIVES TIMELY TIPS TO VACATIONERS

The Atchison, Topeka and Santa Fe Railway has some timely advice to offer vacation planners.

Morris H. Wright, the local AT&SF passenger agent, cautions that all who are planning a railway trip during the summer months, should make reservations now, if possible.

Same advice applies to all modes of transportation, air, land or water.

If it is the Santa Fe you are traveling on this summer, arrangements can be made at Santa Fe Railway's Inglewood ticket office. Telephone number is OR 7-1272.

Mr. Wright suggests that Norcrafters identify themselves as working at Norair, should they make Santa Fe reservations. This won't hurt and it certainly might help.

Also as a point of vacation interest, the Santa Fe advises that their trains are now open for reservations through September.

They have a "go now—pay later plan."

They have "Economy Family Plan" fares, honored for departure Monday, Tuesday, Wednesday, or Thursday, return any day.

# Elites, Nortronics in Crucial Game Tonight

Tonight, March 14, excitement runs high in the NRC basketball race with the Elites from Norair tangling with the Nortronics team. Championship is at stake.

Nortronics has won round one and two. If the Elites should win tonight a one game playoff for the Hawthorne plant championship will have to be played.

The fray will take place at

Leuzinger High School gym at 8:15 p.m.

Top league averages at presstime: Greg Halberg, Elites, 31.2; Bob Vickers, Nortronics, 21.3; Clarence Marks, Trotters, 20.4; Don Greco, Elites, 16.3; and Don Kies, Nortronics, 16.3.

Top free throw honors belong to John Pineda, Turncoats, with 80 per cent. Dick Van Valkenberg, Nortronics, is next with 72. Don Greco, Elites, is third with 69.

## DANCERS START BEGINNERS CLASS AT ANNEX

A brand new series of dance classes starts Thursday, March 15 at the Clubhouse Annex, states Wes Williams, NRC Dance Club commissioner.

The beginner's class gets under way at 7 and continues through 8:30. The advanced class then takes over from 8:30 to 10:30.

The beginners are concentrating on the waltz and the eastern swing while the cha cha and the waltz are being studied by the advanced class.

Ten lessons given over a 10-week period are \$10 a person.

Thursday, March 22, will be an additional registration night. Bill Martin is the instructor.

Singles, couples and visitors are cordially welcome to attend.

## NRC ART CLUB EXHIBITS IN HAWTHORNE

The NRC Art Club members have an exhibit under way at the Picture Frame Mart, 130 Hawthorne Boulevard, says Stewart Luce, commissioner.

The paintings, products of Club artists, will remain on display through March 17. Stewart suggests that Norcrafters who intend to try their hand at painting and who would like to become members of the Art Club, should see this exhibit in order to get an idea of the quality of work generated under the influence of club guidance.

The pictures, incidentally, will be on sale at reasonable prices.



# Management DEVELOPMENT Program

## *our long-range investment in people...*

Norair management feels that one of its most important science responsibilities is the development of human resources to keep pace with the Division's development work in the technologies.

Equal research effort is, therefore, applied to technology and management science.

Stated Corporate Vice-president and Norair General Manager Dick Nolan, "Our Division's long-range goals and objectives present a challenge in the need for a continuous flow of new management talent. The answer, we believe, is through a sound and carefully thought-out Management Development program. Such a program has been approved and is now under way."

Ground rules and overall concept and objectives of the program were formulated under the jurisdiction of Jack Mannion, manager, Manufacturing while in his former position as assistant to the general manager.

Architects of Norair's Management Development program are John B. Clark, director, Industrial Relations section, and Dr. Vernon Sheblak, chief, Management Development and Industrial Training. They are aided by UCLA's three-man management and human relations science team consisting of Dr. Robert Tannenbaum, professor of Personnel Management and Industrial Relations; Dr. Charles Ferguson, head, Department of Conferences and Program Consultation; and Professor Arthur Shedlin, head of Placement and lecturer in Personnel Management.

The program started with briefings and discussions at the highest management level, that of managers. Directors had their first seminar immediately thereafter. Chiefs, general supervisors, general foremen, supervisors and foremen are participating in turn.

To give all Norcrafters an inside look at this newest management science tool in action, the Northrop-Norair News presents a candid and unposed pictorial of the first director-level skill practice session.



**DIRECTOR'S SEMINAR**—Dr. Tannenbaum and Norair's John B. Clark discuss features of a new two-way management development review form. Here the individual lists his job functions and responsibilities as he sees them. His boss does the same. Together they evaluate. Out of such communications comes a clear job picture.



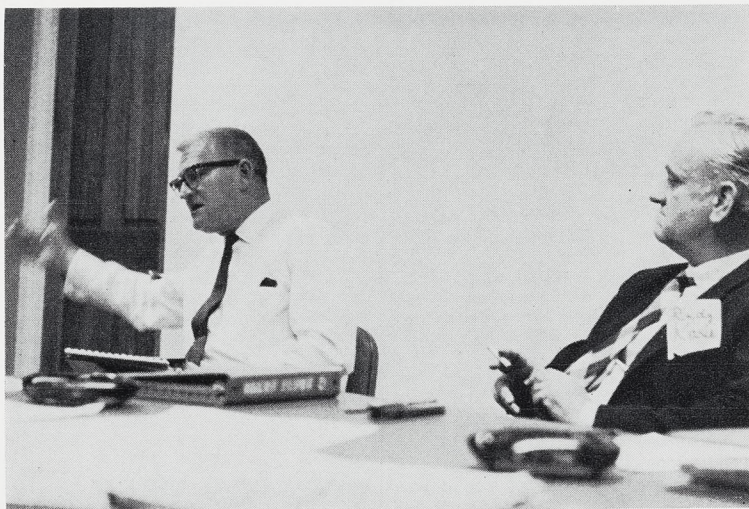
**PROFESSOR SHEDLIN**, standing, clears a point with Property Management's Colonel Lockwood. Here directors have been divided, half are acting as subordinates, half supervisors, and formed into practice teams. Around the table are Messrs. Kosin, McCracken, Lockwood, Grothe, Robinson, Powell, Kelley, Fellers, Stuart, Crews.



**EVALUATION** — Dr. Ferguson, standing, intently monitors discussion on personal qualifications inventory. From left around the table, Messrs. Krause, Egbert, Cassell, Nelson, Mathes, and Whitman. Objectives of program include a Division-wide system for objectively considering qualified candidates for all management positions, and to assist those now in management to improve performance and prepare for greater responsibility.



**ED ROBINSON** emphasizes, Rudy Kosin observes. Additional objectives of the program are to identify and satisfy training needs of people; and to build the management team and to back that team with a reserve of trained men.



**CARL HOOD** and Captain Kaye Herzer, who is at Norair on Air Force "Education Within Industry" program, compare their concepts of assignment responsibilities as part of seminar skill sessions.



**DEEP** concentration is everywhere as Norair directors study problem areas in simulated search for capabilities and developmental needs. From left, Messrs. Mathes, Whitman, Krause, Egbert, Cassell, and Nelson. Seminar continued throughout the day. Nearly 600 persons at Norair are scheduled for first round series. Program will continue as permanent part of human resources research.

**TEAM STUDY METHOD**—Larry Littrell, Industrial Relations seminar observer and recorder, assists Captain Lacy Arnold who is on Air Force "Education Within Industry" tour at Norair, with techniques of counseling and critique. The Captains learn details of Division management sciences program by fulfilling assignments side-by-side with Norcrafters.







## T-2 Activation Honor



**GOLD HAT AWARD**—Max Fayweather (left), Northrop Norair T-2 Site manager, and John P. Healey, Martin Marietta Corporation T-2 Site manager, shown with the coveted Gold Hat trophy won by the T-2 Site Activation team. This trophy is awarded by Martin Marietta's Titan Site Activation Department to the site that has excelled above all others in activation performance and project cost reductions. Mr. Healey stated that this represents the results of real cooperation and singleness of purpose by two major industrial concerns working as a team toward a common objective . . . the security of our nation.

## Air Force T-38 Undergrads "Blaze" Through Pilot Training Supersonically

Twenty-five pilots of Class 62-FZ will receive their wings next Friday, March 30, at Randolph Air Force Base.

They will lay claim to a "first" in Air Force annals. They will be the first to blaze through un-

dergraduate pilot training supersonically.

The men have spent the last six months in the Northrop T-38 Talon.

And the Talon is in itself another Air Force "first", several

firsts in fact—first trainer airplane with speed and handling characteristics similar to the "Century" Series fighters; first trainer airplane to set time-to-climb records in the Century Series league; first airplane of any type to complete the new Air Force "category" system of acceptance, and many more.

As stated by Air Force News Service from Randolph, the idea behind the T-38 program is to close the performance gap between the trainer and the combat aircraft. One practical application is to eliminate much of the graduate pilot training in going from subsonic to supersonic aircraft. Another byproduct is to concentrate more on weapon systems skills in combat units.

Officials at Randolph said success of the program was beyond all expectations. The Air Force has now made it standard at seven ATC advanced under-

(Continued on Page 2)

## General Briggs Says Talon Trained Pilots Way Ahead

The first class of student pilots trained in the T-38 Talon "know more about instrument flying and high-performance aircraft than any group of students ever graduated from U.S. Air Force flying schools," says the commander of the USAF Air Training Command.

Lt. General James E. Briggs said that the pilots who are now completing T-38 training and will graduate March 30 have literally been prepared for tomorrow.

"They are ready to enter the most sophisticated aerospace vehicles we have in the inventory . . . or those we will have," he told a meeting of the World Affairs Council of Los Angeles. General Briggs pointed out that the T-38 student pilots "have

been flying at speeds of 850 miles per hour for the past six months," and added that this is before they are considered as pilots.

"When you know that Astronauts Glenn, Grissom and Shepard graduated from pilot training in 150-mile-an-hour airplanes just a few years ago, it is not difficult to project these young T-38 pilots into the reconnaissance/strike B-70, the Dynasoar and even true piloted space vehicles," said General Briggs.

## SPACE METALS YIELD SECRETS TO DIVISION'S MANUFACTURING R&D

Norair's Manufacturing Research and Development group is scheduled to hold open house for members of Division Management Council and officials of Northrop Space Laboratories, it is announced by Jack Mannion, manager, Manufacturing.

Manufacturing Research and Development is under the direction of Barney Gaiennie, chief.

One area of study and research in R&D labs that is of high interest is that of determining perimeters for high temperature honeycomb heat shields and structural panels.

Division capabilities in this highly sophisticated field stem from progress that Norair has made in Nortobraze research and development and in other exotic metals work of which honeycomb heat shields are a part.

Norair has achieved high status in the industry in brazing techniques largely due to our advanced know-how in metal properties, utilization of precision heat controls, and preprogramming techniques which span requirements from simple one-part test samples to complete long-run project integration with the Division's 7090 computer.

Knowledge gained from the honeycomb heat shield work is to serve in structural applications to both air and space ve-

hicles. Materials to be utilized in the study are two of the highest melting refractory metals and their alloys; namely, columbium (niobium) which melts at 4380 F. and molybdenum which melts at 4760 F.

Another project under way in Manufacturing Research and Development, which is being sustained through Company funding, is that of elemental diffusion bonding of stainless steel honeycomb. This technique, applied to cobalt base and refractory metals, is now being incorporated into

a bid with the military.

The diffusion bonding project for which the Division has high hopes of success is a method of attracting one metal to another by placing them together with moderate heat — approximately half their melting temperatures — and moderate pressure with carefully controlled surface conditions and inert atmosphere environment. No braze metal is used.

In preliminary "brute strength" tests, subatomic unions seem to

(Continued on Page 2)

## Talon Formation Fly-by Brings Training Films

Norair - Hawthorne personnel witnessed their first T-38 formation fly-by last week.

Five airplanes led by Category III Test Director Lt. Colonel Arthur W. Buck, circled the field during a training mission that had originated at Randolph. Destination was LAX.

The flight brought five new ATC T-38 color training films to Norair where they were previewed by key Company officials.

The training film project was first proposed 18 months ago by Colonel Buck while at Edwards. Actual production got under way six months ago. Captain Eugene

Fausett, ATC flight commander and film project officer, brought his script writers to Norair for a three-month working tour

where their efforts were supported by Field Service personnel.

The five films are:

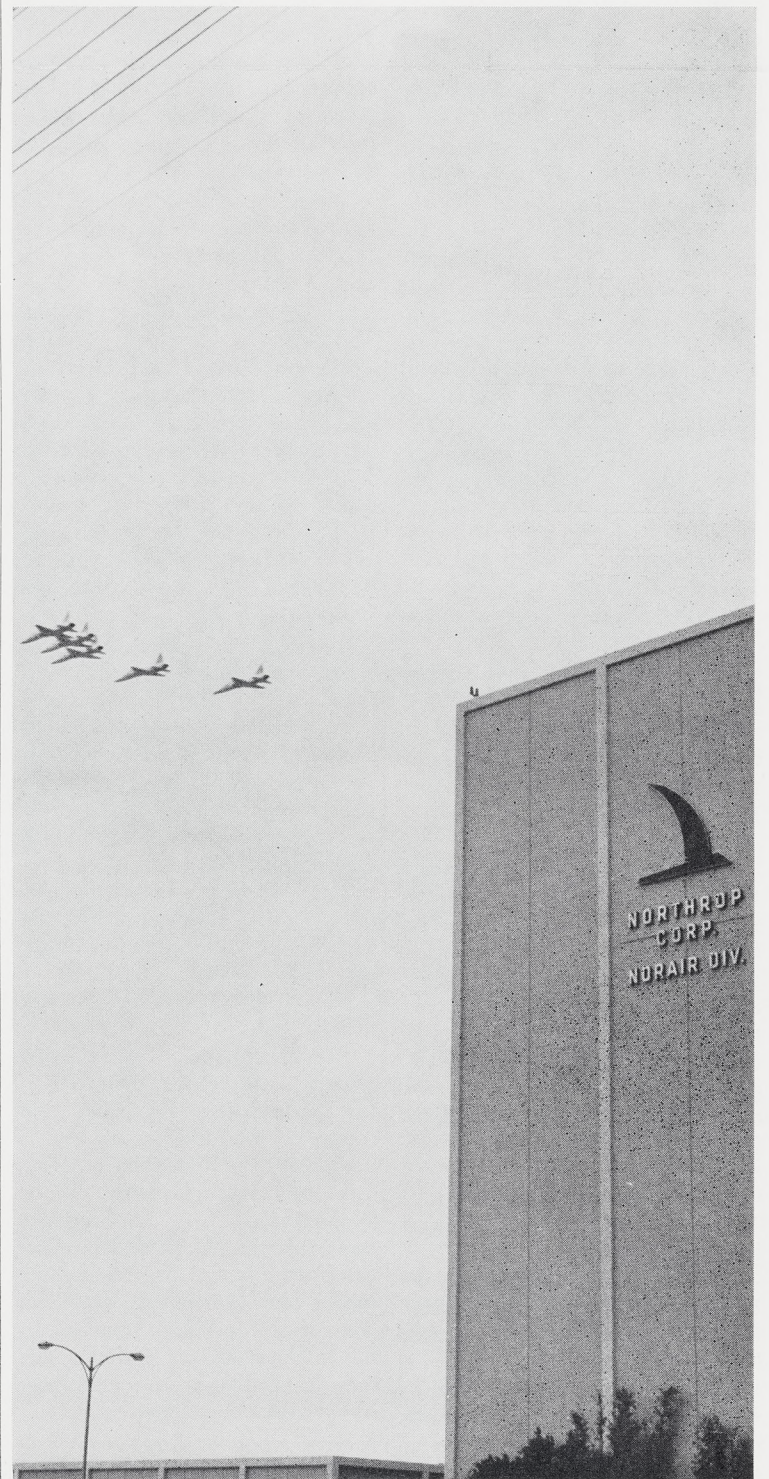
Introduction to the T-38—17 minutes.

Contact Missions—30 minutes. Emergency Procedures — 20 minutes.

Instrument Procedures — 30 minutes.

Formation and Aerobatics—17

(Continued on Page 2)





## About Life Scouts



**FRIENDS OF SCOUTING**—Tom McCarthy, Norair manager, Administration, confers with Roger A. Mahany, field scout executive, Los Angeles area, on plans for Annual Life Scout Recognition dinner. Event, which will serve to encourage continuous merit badge program leading to Life Scout rating, is sponsored by Centinela District Boy Scouts of America and will be held April 16 at the Cockatoo Inn. Mr. McCarthy is dinner chairman this year. Norcrafters wishing to sponsor a scout at the dinner should make application at Personnel Activities before April 6. Price is \$10 total for sponsor and a scout.

## Graduates

(Continued from Page 1)

graduate training bases.

Class 62-FZ did not have a single accident and it took only about 12 hours and 30 minutes of dual time for the average pilot to make the transition from T-37s to the supersonic T-38.

The graduation marked the official end of the T-38 Category III test program.

Testing began last March at Randolph. Phases I and II of the test program were conducted at Edwards AFB, and the majority of the operational and maintenance personnel conducting the test at Randolph received training on the T-38 at the California base.

The first six months at Randolph were utilized for instructor upgrading and checkouts of key personnel.

A test class of 26 officers reported last September and by the last of March are scheduled to receive 140 hours of flying time in the Talon. Average time before the students soloed was 14 and a half hours. Approximately

one-third of the class soloed in 12 and a half hours which was the minimum.

In preparation for the Talon program at Randolph, a mobile training detachment from Amarillo AFB, was assigned to the base for nine months to train selected personnel. Four test cells were constructed along a flight line for exhaustive checks and are operated on a 24-hour basis.

At the conclusion of Category III testing, the Talons will remain at Randolph and will be used in the ATC instructor program.

Those in charge of the T-38 Test Program at Randolph are Lt. Colonel Arthur W. Buck, director; Major Daniel A. Engelhardt, operations officer; Captain Marland O. Marshall, assistant operations officer; Major Orville C. Rez, chief of standardization and check section. The two flight commanders are Captain Eugene W. Fausett and Captain James E. Light. Major Jimmy L. Nichols is the Category III maintenance officer, and his assistant, Captain Francis E. Jackson, is flight test maintenance officer.

## Manufacturing R&D

(Continued from Page 1)

have been achieved. The interface between two metals in such a bonding technique, when successful, vanishes entirely.

Another promising program is the development of preprogrammed controls coupled with extreme precision techniques to produce Heliarc spot welds acceptable to the designer as structural welds. Perfection of such equipment would permit major portions of aircraft now laboriously joined with thousands of rivets to be assembled at lower cost.

Such spot welding techniques provided integrity for high speed, high strength applications are achieved, would further revolutionize the industry by eliminating the necessity for matched location of rivet hole patterns and an elimination of many major tool requirements. Automatic features of the process indicate a high degree of quality

and workmanship, even in the hands of nominal skill operators. Assembly could be by the one side access method, thereby freeing designers from many onerous restrictions.

High strength spot welds based on Norair Manufacturing Research and Development premises are now being envisioned in some of the Division's newest design concepts.

Manufacturing R & D works closely with other elements of the Corporation. Facilities, findings, and Manufacturing R & D manpower are considered to be especially important in support of Northrop Space Laboratories' undertakings. At present, a joint program with Nortronics is under way in which precision controls are being applied to the calibration of variance factors in guidance optics induced by aerodynamic heating.

Recent outstanding accomplishments of Manufacturing R&D in-

## NORAIR SUCCEEDS IN PROFILING TEMPERATURE OF ABLATION LAYER

When you see a shooting star at night this means that a meteor has entered the earth's atmosphere, is melting, turning to gas, and burning.

The same forces, speed versus the atmosphere, have to be contended with when a space capsule returns from orbit or when a missile in the high reaches, arcs down to impact its target. Without scientific protection they would become "shooting stars" and be consumed in flame.

### A PHENOMENON

Ablation is the phenomenon used to protect our missiles and space capsules from the fiery furnace of re-entry.

Norair Division has recently scored significant advances in the field of ablation. Methods and equipment have been perfected to record and observe the complete temperature profile of the ablation layer as it is subjected to re-entry heats.

The work in the ablation studies which is a continuing Division-funded program is under the direction of Jim Haney, chief, Missiles Systems Engineering group. The project is headed by Vic Jaworski, supervisor, Design Integration program. Materials Science Lab's support in the studies is being furnished by Frank Torre, engineer.

### HEAT DRAINS OFF

It has been recognized for many years that high temperature - caused degradation consumes—drains off harmlessly—considerable amounts of heat and that the amount of heat consumed varies depending on the ablation properties of the material used.

As the material degrades and sublimates, the heat is dissipated and the structural integrity of the vehicle is preserved. The heat does not reach the inside walls and the missile or the space capsule returns safely to earth.

Plastics, ceramics, glass, and graphite have been found to be suitable materials for heat protecting structures.

The most important information needed on the ablating layer is its temperature profile, or graphical representation of temperature changes as the material passes from solid into gas. Due to measurement difficulties this story has been slow in unfolding.

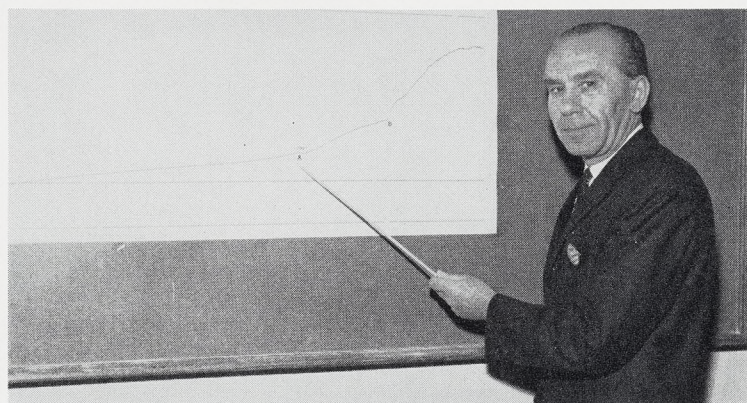
### YEAR AGO

About a year ago, Mr. Jaworski, with the support of Missile Advanced Design, undertook the difficult task to provide a capability to measure the temperature profiles of ablating layer for the family of materials suitable

clude: Perfection of butt welding techniques for extremely thin materials—stainless steel down to .0005 inches, titanium and other "tougher" materials down to .002. This capability is currently being applied under contract to lunar space vehicles.

Radiant hot deep forming equipment for titanium and molybdenum for Ceko stamps, conventional presses and brakes.

Air-float tables for heavy presses used in the Boeing contracts for precision honeycomb core crushing. This development—air floating—led to the Division's present Air Force contract for construction of the 10-foot rotational space flight simulator.



**PROFILE**—Graphic recording typical of ablation temperature readings as a function of time. Vic Jaworski, supervisor, Design Integration, indicates at "A" phase change on graph from solid to liquid marked by a "kink" or halt in temperature rise. A second or two beyond, kink at "B" indicates temperature of transformation of liquid into gas; another halt in heat rise. Ablation layer is very thin—a few thousands of an inch thick.

as heat "protectors" in hypersonic environments.

He now reports that he has been fully successful. A sensor has been developed which instantaneously records the temperature through the layer as ablation progresses. We also learn that this

sensor is being patented and can be mass produced in a simple and inexpensive way. It is capable of withstanding pressures and turbulence in the ablating layer and yet measure continuously its temperature profile without "averaging."



**RE-ENTRY HEAT**—Norcrafters on ablation project discuss properties of various materials used in heat shields to protect capsules and missiles when re-entering the earth's atmosphere. From left, Mr. Jaworski, Frank Torre, electrical engineer, Material Sciences Laboratory support; and Jim Haney, chief, Missile Systems Engineering group. On blackboard is formula of heat conduction.

## SECTION MERGER ANNOUNCED BY MCCARTHY

Merging of Norair's Industrial Relations and Security and Protection Services sections has been announced by Tom McCarthy, manager, Administration department.

John B. Clark, director, Industrial Relations as formerly organized, has been named director of the new section. Paul Crews, formerly director, Plant Security and Protection, has been named assistant director and Norair chief security officer.

The section will be called Industrial Relations and Security.

In commenting on the reorganization, Mr. McCarthy stated that the change reduces the span of control by combining these two closely related functions and capabilities.

"The section merger," stated Mr. McCarthy, "helps project Norair's constant effort to obtain maximum organizational effectiveness and economy."

Mr. Crews' office location has been moved from the Security and Protection area of the Transportation building to the directors' suite in the Industrial Relations building.

## Fly-by

(Continued from Page 1)

minutes.

The training program calls for all five films to be shown to the fledgling pilot when he first enters primary.

Later in basic training the pilot will see the films again, one at a time, as he progresses from subject to subject.

Theme of the series is positive throughout. The first film opens with a cockpit approach view of Randolph Air Force Base. It proceeds then to outline the history of Air Force training beginning with the Wright Brothers airplane and on through the many other trainers to the supersonic T-38.

**Northrop-Norair News**

VOL. 20 NO. 7

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NORAIR DIVISION

CHARLES BRADFORD, Editor

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### RIDES WANTED

7 a.m. — 3:45 p.m.

BROADWAY & 87TH PLACE, Los Angeles. Robert Martinez, ext. 2113, 2114. PL 0-2260.

PACIFIC COAST HWY. & LONG BEACH BLVD., Long Beach. Stanford M. Fuch, ext. 2619, 2301, HE 2-5327.

7:30 a.m. — 4:15 p.m.

HAWTHORNE BLVD. & MANHATTAN BEACH BLVD., Lawndale. Janet C. Brammer, ext. 691, 370-1054.

WOODRUFF AVE. & SOUTH ST., Lakewood. J. S. Greenough, ext. 1401, TO 6-5703.

8 a.m. — 4:45 p.m.

ARBOR VITAE & LA BREA, Inglewood. Joan Haadorn, ext. 1436, OR 1-3280, 5

### RIDES OFFERED

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PACIFIC COAST HWY. & LONG BEACH BLVD., Long Beach. Stanford M. Fuch, ext. 2619, 2301, HE 2-5327.

7:30 a.m. — 4:15 p.m.

WOODRUFF AVE. & SOUTH ST., Lakewood. J. S. Greenough, ext. 1401, TO 6-5703.

8 a.m. — 4:45 p.m.

CARSON & NORMANDIE, Torrance. Joseph Negrino, ext. 2264, FA 8-6698.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

### FOR SALE

PIANO, upright, good condition, \$98. DA 7-9084.

BUICK SPECIAL, 1956, 2-dr. h/top, r/h, w/w, black lacquer paint, \$675; stereo record player, GE, portable, 4-sp. turntable w/45 rpm spindle, auto. changer & turn off, separate speaker & amplifier w/10 ft. ext. wire, 25 watts, \$75. DA 3-0979.

BUICK, 1955, 2-dr. h/top, automatic trans. & power steering, \$425. OR 0-7146.

BAND SAW, 12" Craftsman, mounted on bench, w/1/4 hp motor, \$35. OS 6-8768.

BICYCLE, boy's, lightweight, 26". J. C. Higgins. \$10. OS 6-1018.

SPINET PIANO, Wuritzer, mahogany, full size, 10-yr-old. \$350. DA 9-1215.

DE SOTO, 1949, 4-dr. sedan, r/h, new tires & battery, good transportation car, \$150. OS 6-5492.

SHOTGUNS, Remington Mod 31, 16 ga., w/Cutts comp. std. arade, \$55; Remington Model 17, 20 ga., full choke, std. arade. \$30. PL 6-0015.

GAS RANGE, Magic Chef, apt-size, \$60; laundromat washer, Westinghouse, deluxe model, \$125; 2 mattresses, Super Beauty Rest, w/box springs, on steel frames. \$75. AX 3-3687.

CABIN CRUISER, 1955 Ladd, 21', 8' beam, s/s radio, 2 35-amp. stainless steel gas tanks, 8-amp. freshwater tank & pump, sink, rebuilt Chrysler Crown 115 hp ena. \$1800. OS 9-1698.

GOLF CLUBS, irons 3 to 9 & putter, Springfield, \$37.50; bag, \$7.50. DA 9-4489.

FORD TRUCK ENGINE, 1952, OHV 6, new rinas bearings & wristpins, \$25. OS 6-3448.

UPRIGHT FREEZER, Norae, 15 cu. ft., white, 1 1/2-yr-old. \$150. EX 8-6630.

BABY EQUIPMENT, crib & mattress, playpen & pad, sterilizer & bottles, stroller & snoozer, bassinet, king-size, & mattress, rocker, jumper, toilet seat & clothes boy & girl, sizes infant to 1 year. \$75 or will sell individually. PL 1-8549.

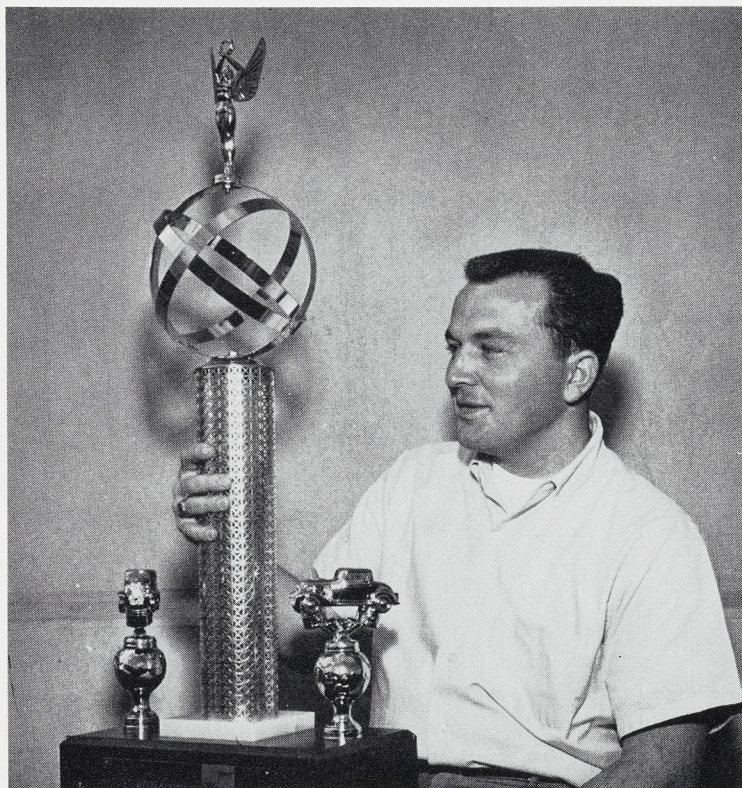
8MM MOVIE EQUIPMENT, Keystone Projector, 750 watt, camera, De Jur, & case w/standard & telephoto lens, 4-light light bar, slicer & editor, reel magazine for 12 400' reels, \$150. DA 4-7254.

ACCORDION, Universal, 120-bass, 3-switch, w/carrying case, \$150. OR 4-1847.

OUTBOARD, Elain, 5 hp, \$40; stroller, Foldarola, \$5. 371-8945.

COCKTAIL TABLE, modern; pole lamp, \$15 for both. PL 9-6882.

REFRIGERATOR-FREEZER, comb., Philco, 10' cap., automatic defrost, white, right-hand door, \$75. DA 9-9464.



**WINTERNATIONAL WINNER**—Gary LaMont, Reproduction, tooled his 352-inch Chevy to 111.24 mph record and a championship at Pomona drag races. Gary, with partner Bill Shimizu, built their own bomb, V-8, with fuel injection. Pomona track is quarter mile. Gary's time was 12.99. There were 12 entries in his event—Class C-Gas. Hot Rod magazine will have a feature story.

### FOR SALE

GAS RANGE, Kenmore, pink, used less than year, cost \$220, \$100. 772-9134. REFRIGERATOR, 1961, Coldspot, auto. defrost, separate freezer unit, 12 cu. ft., \$190. PL 6-9532.

WASHING MACHINE, Whirlpool, automatic, Imperial model, \$65; Go-Kart, boy's, Clinton ena., \$50; bicycle, boy's, 26", Schwinn, front rack & generator lites, \$35. UN 4-7673.

APT. BLDG., 5-unit, in good rental area, approx. \$1300 bal. due on improvement bonds to be paid on 10-year installment plan. \$30,600. FR 5-2866.

BOAT, Glaspar 14', Mercury Mark 25 ena., elec. starter, windshield, steering, deluxe trailer, extra equip., less than 50 hrs. use, cost \$1400, \$650; outbd. ena., Scott, 7.5 hp, new, full gear shift remote tank, bailomatic, \$195. DU 4-4017.

SAW, 10", w/extension, 2 blades, cost \$170, \$120. FA 8-5684.

TRAILER, 15' Shasta, aluminum, has butane stove w/oven, sink, icebox, sleeps 4, extra storage space, elec. brakes 1962 licence, \$595. FA 8-7478.

RUG, 9x15, light brown or beige, \$15. FR 1-0227.

AIR CONDITIONER, for 1957 Chevrolet, \$75. GR 3-1479.

WASHING MACHINE, Kenmore, 1 year's use, \$75. OR 3-1669.

### WANTED TO BUY

PICKUP TRUCK BED, to fit 1961 Chevrolet or GMC, 1/2-ton, 6 1/2' wide side, need tail gate also. PL 4-4384.

DRAFTING MACHINE, Brunning, right-hand. HO 3-5496.

TIRES, 2, 600-16, b/w, tube-type, 4 or 6 ply rating, will consider 650-16 if good. TO 1-6404.

POOL TABLE, regulation size. OS 5-6311.

CEMENT MIXER, either electric motor or gasoline engine power OK. OS 6-7963.

### RENTALS OFFERED

HOUSE, 2-bdrm., near schools & park, vacant 1st of month. OS 9-6695 after 5 p.m.

HOUSE, 2-bdrm., completely redecorated, Lawndale area, no pets, \$85. 371-6775.

APT., 2-bdrm., unfurn., stove & refrigerator available, \$90 mo. OS 6-8283, call after 5 p.m.

CABANA, furn., bachelor, utilities paid, fireplace, walk to beach, \$60 mo. DA 4-8632.

HOUSE, 3-bdrm., 1 1/2 miles from Northrop, w/w carpet, built-ins, 1 1/2 bath, \$127. OS 5-8988.

APT., deluxe, 2-bdrm., large closets, hardwood floors, separate dining area, carport, 4 short blocks to Northrop, \$95 mo. OS 6-1574.

### RENTALS WANTED

HOUSE, 3-bdrm., in nice quiet neighborhood, must have fenced back yard & stove, will be ready to move about April 15. \$95. 376-5543.

### PERSONALS

CHORD ORGAN & BENCH, new, take over pymt. of \$13.61, approx. \$489 owing. PL 9-7832.

## M-C Meet Set for April 6

Northrop-Norair Management Club's new President Al Binsacca announces that the next dinner meeting is scheduled for April 6 at the Pen and Quill Restaurant.

This will be installation of officers night with gavel exchange between Al and outgoing president Ed Nolan taking place.

Social hour gets under way at 5 p.m.

Management Club official family for 1962 is made up of:

Al Binsacca, president.  
Bill Schramm, vice-president.  
Ray Staley, night vice-president.

Louis W. Perry, secretary.  
Fred Rosenthal, treasurer.

John Shanelec, sergeant-at-arms.

Committee chairmen are:  
Jack Gibilisco, finance.  
Tom Brazil, junior achievement.

Louise Hobson, personnel.  
Bill Jones, forums.

Harry Blocher, publicity.  
Herb Rich, programs.

Dona Page, membership.  
Ed Laski, educational tours.

Ed McGrath, facilities.

## HEARST CASTLE TOUR COMING UP

Hearst Castle tour coming up. It's just five short weeks away.

says Howard Cornelius, NRC Travel Club commissioner.

The bus will leave from the Norair cafeteria, Gate 5, at 5:30 p.m. on Friday, May 4. Return will be on Sunday, May 6 with arrival set for early evening.

Price, \$35.80, takes care of just about everything including baggage handling and tips at the Vandenberg Inn in Santa Maria.

### FOR SALE OR TRADE

JAGUAR XK140, 1956, MC conv., \$1495 or trade for good trans. car as part pymt. PL 4-7628.

PLYMOUTH, 1960 Belvedere, 2-dr. hd/tp, take over pymts. of \$71.60, take older car or pay \$150 equity. 379 4805.

## Roaring Twenties Ball to Headline NRC Social Year

The Northrop Recreation Club comes up with a sure success, another edition of the Roaring 20's ball.

Vital statistics are:

Date: Saturday, April 21.

Place: Mayflower Ballroom in Inglewood.

Price: \$1.50 each.

Music: Charlie Green's Rhythm Rascals.

Social hour starts at 8:30 with dancing from 9:30 p.m. to 1:30 a.m.

Dress is optional, Roaring 20's or casual.

There will be a prize for the best costume with the Roaring 20's theme and there will be a "You Were There" contest in the Charleston and the twist.

Beverages before dinner are 25 cents each. That \$1.50 price incidentally, includes a gigantic Roaring 20's style buffet.

### SUMMER LEAGUES

## NOW FORMING Softball Bowling Golf

Entry forms and information at Personnel Activities. Telephone 2784.

## NRC Gun Club, a Straight Shooting Everybody's Hobby

Our Club consists of 20 members who are interested in some phase of the hobby of guns. We are all individual members of the National Rifle Association, for which we have received a 100 per cent award wall plaque from NRA.

Norcrafters interested in guns,

### BY DICK CADE NRC GUN CLUB COMMISSIONER

antique firearms, hunting, reloading ammo, or just plain "bustin' caps at bull's-eyes", should come forward and state preference to NRC to see if some phase of activity can be beneficial and fun for you. If you have experience someone else can be helped, if you are inexperienced, we will help you. If you have a gun to sell or swap, or if you would like to buy, we can help you do this too.

Gun Club is a broad term which doesn't explain the individual's interest. Most of the members are far more channeled in their likes and preferences. Center-fire rifle shooters (big bore boys) might not be interested in scheduling a pistol match but they might be "all ears" when discussing reloads or powder variances. We reload cartridges for a fraction of the cost of factory ammo. This saving permits some of us to practice who could not otherwise afford

## NRC ANNOUNCES SLO PITCH, REG PITCH TOURNEYS

Softball-minded Norcrafters are advised by Joe Perez, Norair commissioner, that now is the time to start forming a team for entry in the upcoming preseason tournaments.

There are two—slow pitch, 16-inch ball which will be on Tuesdays, 5:30 to 10 p.m. starting April 17—and regulation pitch, 12-inch ball, Wednesdays, 5:30 to 10 p.m. starting April 18. Alondra Park will be site of play.

Teams should select managers and obtain team roster or individual entry forms at Personnel Activities.

There will be a slow pitch organization meeting April 4, 8 p.m. at Plant One cafeteria.

the pastime.

Did I say pastime? What I really meant was, when you get gun powder in your veins it's mania, just like the man who takes a walking stick and beats and chases a little white ball all over a big green field at 6 a.m.

Ranges where we can shoot the center-fire rifles and magnum revolvers are to far to be practical for our club to attend. However, when the Torrance Range reopens, we will try to schedule some shoots there.

The Pistoleers are fairing a



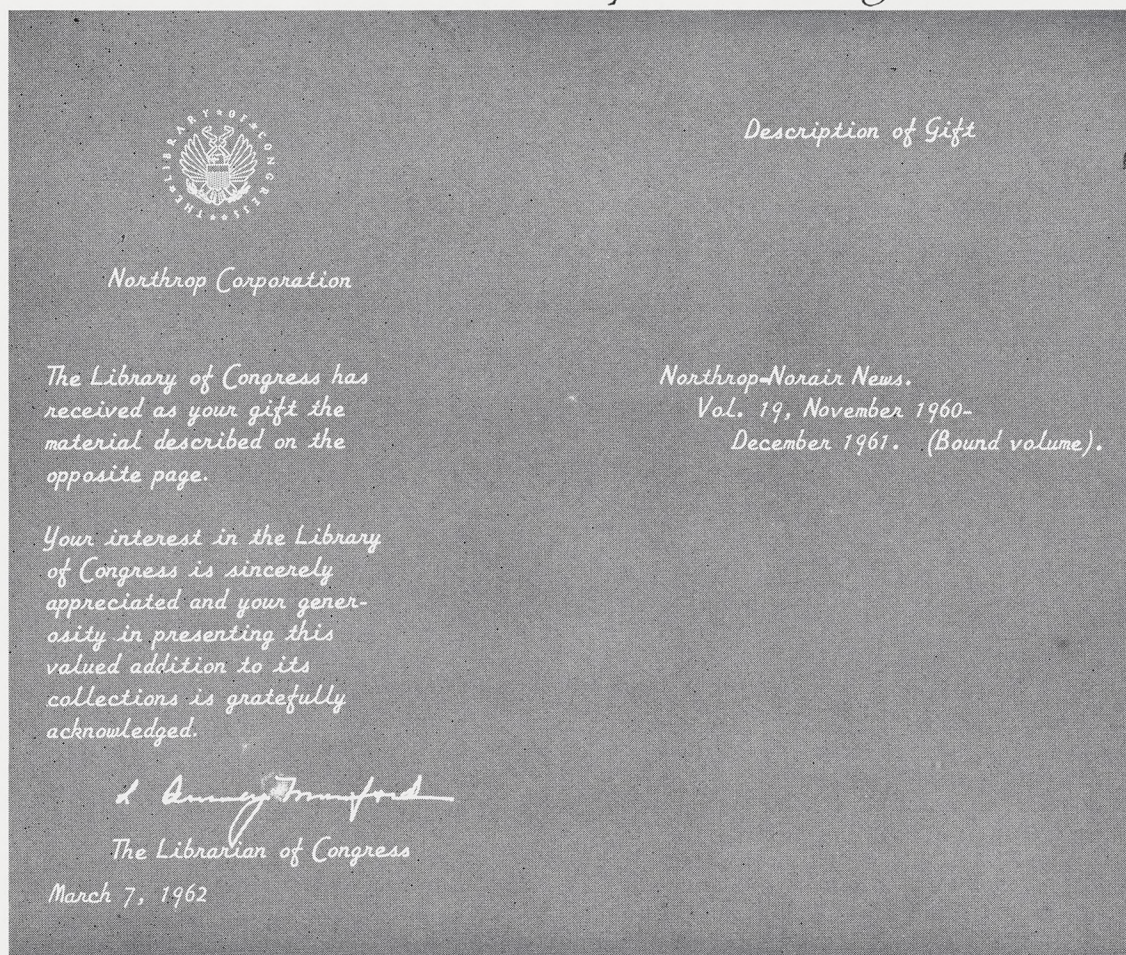
little better, North American Recreation Indoor Range invited us over on a prescheduled basis and we have attended some fine practice sessions there. Adequate safety rules are practiced and we also instruct our members to report any unsafe condition or person performing an unsafe act.

For our readers interested in having their children attend a Hunter Safety training school, we have the necessary information and can make the arrangements. Classes start every month and the fee is \$5 each for which the school furnishes guns, ammo, text material, and certificates. The instructors are NRA certified.

A word to those of you who think you are afraid of a gun. Remember, guns never hurt people, people hurt people. To know a gun is to respect it, learn what it can do and what it is for and use it for that purpose. Don't teach your youngster to fear a gun, teach him or her how and when to use it. Most accidents involving guns are caused by ignorance of operation or violation of one or more of the safety rules.



## From the Library of Congress



**THE NORTHROP-NORAIR NEWS**—Adding to the permanent literature of the nation, bound volumes of the Northrop-Norair News are presented each year to the Library of Congress, Washington, D.C. The Library of Congress is now 160 years old and is considered to have the greatest, most complete store of knowledge in the world.



**BACK FROM SCHOOL**—Returning Norair group is welcomed home by Industrial Training Supervisor Phil Overhage, after successfully completing course at the advanced electronics equipment maintenance school, Riverside, California. The school, conducted by General Electric engineers, covered maintenance techniques for the Milwaukee-Matic Numerical Control System. Left to right are Mr. Overhage, Paul Wurzer, Industrial Training instructor, and Maintenance electronics technicians Paul Sizemore, Dan Krohn, and Gabor Toth.



**INVENTION ROYALTIES**—Jean Snyder, process analyst, Norair Material Sciences Laboratory, receives patent royalty check from Stan Peterson, Corporate Product Licensing. Jean invented Norair's electrolyte Formula #3 which retards electrolytic grinding machine corrosion while accelerating the cutting process. Formula #3 finds ready use in manufacture of stainless steel core and with the new exotic metals. Compounded Chemicals Company of Lynwood is the licensee.

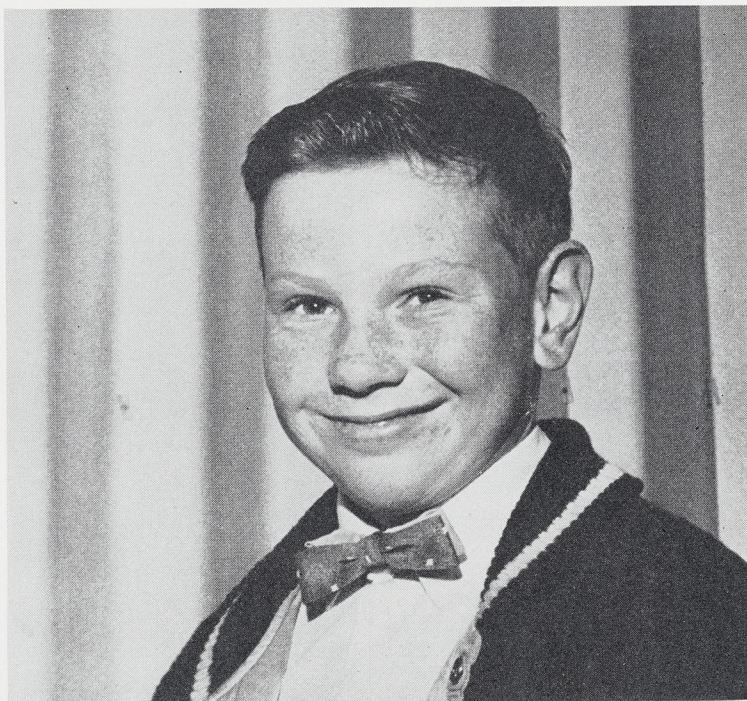
## Students Come Home

## A Talon for the U.S. Navy

## New Members

## A Check Is Received

## A Proud Young Man



**HONORED**—Young Alexander Weir, 11, son of Norcrafter Dr. Alex Weir, Corporate office, has been selected one of 12 Southland sixth graders to tour nation's capitol. Trip is being sponsored by KNXT and will be part of that station's two hour-long "For which We Stand" programs based on the youngsters' experiences. Members of the group were picked for their understanding of democracy, experience in student government, and leadership ability. Alex and the others will fly to Washington next week.



**AT LITCHFIELD PARK**—Scale model of the T-38 trainer is presented to Navy Resident Representative Office at Arizona Division, Goodyear Aircraft Corporation. From left are Karl Fickes, Goodyear plant manager; Dan O'Halloran, Norair chief, Quality Control who brought model from Hawthorne. Lt. Commander and Navy Security Officer Lee Marona who accepted for Navy; Norcrafter Fred Burkett, resident rep at Goodyear who made presentation; and Harold James, manager, Quality Control for Goodyear. Goodyear makes canopies and windshields for the Talon.



**SAFETY PAYS OFF**—New Norair Golden Shoe and Wise Owl club members give testimonial to prudent practice of wearing safety-toe shoes and safety glasses. Dr. William Blum, optometrist and in charge of Safety Shoe Store, left, presents Golden Shoe certificates to Alexander Fregoso and J. W. Gray. John Breneman, director, Night Operations, right, presents Wise Owl memberships to Joseph Akers and Clarence Goodwin. Norair personal protective equipment in each case prevented injury.





# Northrop-Norair News

Issued biweekly by Norair Division of Northrop Corporation

Wednesday, April 11, 1962

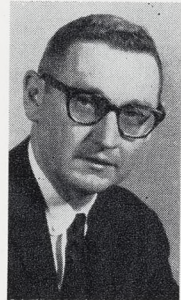
HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, RAPID CITY, EL PASO

## NEWS BRIEFS

**QUARTERLY REVIEW**—The second quarterly review of Northrop-Norair's 1962 fiscal year plan by the Management Planning Council has taken place. Assessment was made of Division progress and activities including departmental adjustment to the new organization structure. Preliminary ground rules for funding and finance of 1963 fiscal year plan were also discussed.

**COMMITTEE MEMBER**—Frank Smith, chief, Employee Relations, Northrop-Norair, has recently been appointed an alternate employer member of the wage board for Industrial Welfare Commission. This committee regulates the wages, hours, and working conditions for women and minors employed in the manufacturing industries throughout Southern California . . . One of the items to be covered is Labor Code Section 1350 which limits the time a woman may work to eight hours in one day and forty-eight in one week. The first meeting is scheduled on May 3 and 4 in Los Angeles . . . In addition, the Merchants and Manufacturers Association has invited Mr. Smith to participate along with Mr. Charles G. Bakaly of the law firm of O'Melveny and Myers, to discuss all general labor laws, grievances, and arbitrations . . . During the month of March, five meetings were scheduled through the area. Mr. Smith spoke to some 1800 leading Southern California firms who are members of the Merchants and Manufacturers Association . . . Mr. Smith is a member of the State Bar Association.



**DR. SCHWEBS**—Dr. Dieter H. Schwebs, office of the Comptroller, OSD, and party visited Norair's Palmdale and Hawthorne facilities for presentations on T-38 and N-156 airplanes. At Palmdale the group inspected T-38 assembly line and went for demonstration flights . . . At Norair, they were greeted by Corporation President Thomas V. Jones. Discussions and briefings on the airplanes were led by Mr. Jones; Dick Nolan, Corporate vice-president

(Continued on Page 4)

## Talon Men

## Navy Awards Guidance Work To Norair

Northrop Corporation's Norair Division has been awarded a U.S. Navy contract to investigate advanced methods of missile electro-optical guidance, it has been announced.

The classified \$99,924 contract was awarded by the Office of Naval Research. It involves the use of a Norair-developed analog simulator to evaluate various terminal aids—that is, means of correcting the missile's flight during the final plunge to the target. The work will be conducted at Northrop Norair facilities in Hawthorne and will be under the jurisdiction of Research and Development, Manager Art Ogness.

## NEWS MOVES TO SECOND FLOOR

The Northrop-Norair News office has moved from the third floor to the second floor of the Engineering Science Center.

Location is to the immediate left of the elevators.

Telephone numbers remain the same, 2456 and 2457.

Mail zone is now 32.

# FREEDOM BOND DRIVE

DETAILS IN NEXT ISSUE



**FIRST, FINEST AND PROUDEST**—Members of first T-38 graduating class at Randolph Air Force Base with their officers and instructor pilots relax for photograph after completion of T-38 training. (See story, Norair News, March 28 issue.) Front row, left to right, First Lieutenant F. H. Dietz, Captain B. W. Stewart, First Lieutenant R. J. Zapotocky, Captain C. A. Anderson, First Lieutenants R. E. Enderle, R. R. Smith, J. K. Clark, L. L. Turner, D. A. Wilson. Second row, from left, First Lieutenants D. B. Wolfe, S. H. Holmes, R. H. Vos, A. L. Rennick, R. G. Dyer, C. I. Walters, J. M. Wilson, and E. C. Rath. Third row, from left, First Lieutenants J. E. Packer, A. J. Voit, G. E. Flynn, W. E. Cochran, A. L. Burden,

D. C. Wheeler, and C. R. Henderson. Fourth row, from left, Captain R. H. Applegate, IP; Captain J. A. Gibler, IP; Major O. C. Rez, Standardization and Checks; Major D. E. Engelhardt, Ops officer; Captain J. S. Lynch, IP; Captain M. O. Marshall, asst. Ops officer; Captain W. R. Kenty, IP; Captain R. H. Head, IP; Major J. L. Nichols, Maintenance officer; Lt. Colonel A. W. Buck, T-38 Test Force director. Fifth row, from left, Captains Carlos Gonzales, IP; C. G. Baily, IP; A. R. Baird, IP; D. W. Wingate, IP; L. D. Welch, IP; J. E. Daniel, IP; E. W. Fausett, IP; H. D. Dible, IP; C. L. Gordon, staff officer; R. L. Miller, T-38 Flying Safety officer; J. E. Light, IP; F. E. Jackson, asst. Maintenance officer.

—Randolph AFB Official USAF Photo.



# ESPIONAGE — Acute Danger To Our National Security

*For the new Norcrafter who has never worked for a large defense firm, industrial security is a new experience. He is impressed by the measures taken to safeguard classified information. But before long, the guard at the gate becomes a familiar figure, the badge, locked file cabinet, and classified document control become routine matters.*

*In fact, there is a tendency to forget that the very real threat of espionage lies behind all of the security measures.*

*This problem recently gave Gene Jessick, chief of Security at Nortronics ES&E, an idea. An ex-FBI agent himself, Mr. Jessick made inquiries through the local FBI office to see if the nation's leading authority on espionage, sabotage, and subversive activities would write an article for the Company publications.*

*The answer was yes. The result is here.*

The communists are well aware that the United States represents the most formidable roadblock in their drive for world domination. As such, these conspirators are working with intense determination to undermine this Nation's strength and security. Their methods are varied. Vicious propaganda, trickery and infiltration are vital tactics wielded

cerning a military installation in this country. As an "incentive" Martynov handed the "colonel" a roll of bills and asked that he be furnished the desired military data at a subsequent meeting to be held in January.

Martynov kept the appointment. So did FBI agents who confronted the astonished and shaken Soviet with evidence that

classified information on United States military aircraft. For his extracurricular activities the Soviet official was ordered to immediately leave this country.

## GATHERING

In many instances Soviet and satellite agents are quick to exploit information available to the public. Attendance at conventions of industrial groups is often most rewarding for these officials. In 1959 one of two Soviets attending such a meeting gathered so much material it became too unwieldy to handle. So he left it at a check stand and calmly resumed his collecting activities. When the two departed the convention, they had picked up some 250 pounds of literature.

These communist representatives are also diligent in writing to various organizations throughout the country for desired information. They correspond with industrial facilities, publishing houses and chambers of commerce hoping to obtain documents. Sometimes these culprits subscribe to technical and industrial publications under assumed names at "cover" addresses.

## RUDOLF ABEL

Espionage agents who have no ostensible official connections also ply their wily trade in this Nation. These men work completely under cover. Perhaps one of the most notorious of these agents was Rudolf Ivanovich Abel, convicted spy. Abel, using a fictitious name and disguised as a photographer, pursued his devious mission in New York City. Short-wave radios, a miniature camera, and hollowed-out items for concealing messages were among his spy tools.

It is vital that personnel of strategic industry be alert to any indication of espionage activities. Extreme care should be taken not to divulge any information on vital projects or procedures—information which could prove helpful to someone desiring this Nation's downfall.

Any information concerning possible espionage or sabotage activities should be promptly reported to the FBI. Private investigations should never be made. Indiscriminate discussion of possible subversive activities could well jeopardize investigations under way by the FBI. In cases involving espionage, it is often more feasible to identify members of a spy network, their contacts and modus operandi, than to make immediate arrests.

The FBI is constantly on guard against those who seek to undermine this Nation's security.

*Note — At Norair, procedure for reporting violations that involve Company security is a direct call to the Security group, station 2331. See E.B. 11-3.*

## By J. Edgar Hoover, director Federal Bureau of Investigation

by these culprits.

One of their most important weapons is that of espionage. And make no mistake! The spy system of the Soviets and their satellites is no amateur effort—it is an extremely well-organized and planned operation. Since the days of Lenin the communists have become experts in the art of espionage. They are truly masters of cunning and deceit.

## COMMUNIST TARGETS

In the United States among the primary targets for espionage agents are military and industrial facilities. Communist nations are particularly interested in obtaining data in fields such as electronics, atomic energy, missiles, rockets and radar defense. Obviously, procurement of this data can be most valuable in strengthening their own military and industrial potential.

The communists utilize versatile techniques in their relentless quest for our Nation's secrets. On many occasions their operations call for the participation of Soviets in this country on official business. For example, in the summer of 1954, a Soviet national made contact with a United States Army colonel in East Berlin. The Russian, knowing that the American officer was soon to retire and return to this country, indicated that someone would secretly meet him in New York City that fall. A code phrase was agreed upon for recognition purposes.

## SURPRISE

The FBI was promptly notified of the Soviet's clandestine approach to the colonel. An FBI agent, with the aid of a make-up artist, was substituted for the officer. He appeared at the designated intersection in uptown New York on the prearranged date. Moments later a tall, well-built Russian stepped up to him and repeated the code phrase. The agent made the proper reply.

The Russian was none other than Maksim Martynov, then a member of the Soviet delegation to the United Nations. But his mission that day was most definitely not within the line of duty. For a half hour he plied the man he thought was the Army colonel with questions con-

cerning a military installation in this country. As an "incentive" Martynov handed the "colonel" a roll of bills and asked that he be furnished the desired military data at a subsequent meeting to be held in January.

## ON FRIENDLINESS

Attempts to recruit Americans for their nefarious tasks are, in fact, an important part of Soviet and satellite espionage operations. In one instance in 1956, an assistant Soviet military attache assigned here was declared persona non grata for trying to secure data on radar, guided missiles, jet fuels and atomic submarines from an American sales engineer. The sales engineer during World War II had made extensive contacts with the Russians on both United States government and private business. The Soviet was years later obviously seeking to exploit the American's wartime friendliness.

On another occasion a Soviet representative stationed in the United States hired an aircraft company draftsman for a part-time job. At first, the Russian gave the draftsman insignificant drafting work; then he began asking for brochures on aviation. The climax came when he requested the draftsman to obtain

## Jones Named Director of Times-Mirror

Shareholders of The Times-Mirror Company have elected Thomas V. Jones, president and chief executive officer, Northrop Corporation, to their board of directors.

Norman Chandler, Times-Mirror chairman and president stated, "Mr. Jones at 41 is one of the outstanding executives in the aerospace industry. In his rapid rise to the top at Northrop, he has become a nationally recognized authority on long-range development planning. He is skilled in grappling with current problems as well as detecting trends which will have a significant impact on future business climate. His keen vision in determining growth objectives will further augment the strong Board of The Times-Mirror Company."

## Salaried Employees' Saving To Start Deductions May 7

Northrop Salaried Employees' Savings Plan, (Northrop-Norair News, November 8, 1961) has been filed for approval with government agencies and has been put into operation, it has been announced by Company President Thomas V. Jones.

First deductions will begin with the payroll period starting May 7.

Although the Plan will not be fully effective until all approvals have been obtained, no difficulties are expected, Mr. Jones said.

The Plan, for which all salaried personnel over 21 years of age and with one year of continuous service are eligible, will provide systematic savings via payroll deduction plus added benefit of Company contributions of 50 cents for each dollar invested.

Funds paid in by employees, called the "Savings Account" can be invested in one of two ways depending on individual choice, either all in bonds, or half bonds and half in common and preferred stocks.

Funds contributed by the Company, called the "Profit Account", will be invested entirely in Northrop stock.

Amount of employee investment, at his option, may range as low as 2 per cent but not more than 5 per cent of his base salary.

Full details of the Plan are outlined in the Salaried Employees' Savings Plan booklet issued with paychecks Friday, March 30. All supervision and members of management have been briefed by a team under the direction of the Corporate Administrative Committee for the Plan, Chairman, Senior Vice-president Robert R. Miller.

Questions can either be answered by supervisors or by Dona Page of the Personnel department. Miss Page's telephone station is 642.

Signup applications for the Plan were distributed with pay-

checks last Friday, April 6. Additional applications are obtainable at Industrial Relations offices.

The Plan carries a retroactive feature to February 1. This requires that eligible participants pay a lump sum for the intervening 13 weeks.

There are two signup deadlines, April 20 for those who do not wish to exercise the retroactive privilege, and April 26 for those who do.

In addition to Mr. Miller, the Corporate Salaried Employees' Savings Plan Administrative Committee members are James Allen, vice-president and assistant to the president; William Larabee, vice-president, Legal; Irving Roth, vice-president, Finance; and Ward Dennis, director, Corporate Development Planning.

William Covington, Corporate Retirement administrator, has been assigned additional duties as secretary of the Administrative Committee and Corporate administrator of the Plan. Dan Hill, former Norair treasurer, will act as assistant Corporate administrator of the Savings Plan.

Mr. Covington and Mr. Hill conducted the briefings at Norair. They were assisted by Miss Page.

## FRACTURED BUCK, RICHMAN'S TALK ON PAPER COSTS

Norcrafter Leo Richman, chief, Records Management, will speak before the Orange County Chapter, National Association of Accountants on April 25, it has been announced.

Title of Mr. Richman's talk will be "The Fractured Buck."

Theme is the alarming industry increase in paperwork costs, and what to do about it.

Mr. Richman speaks with acknowledged authority. Norair Division has recorded outstanding savings through his Records Management programs.

The meeting will be held at Disneyland Hotel in Anaheim.

## Space Labs' Tyler McCoy Earns Washington Gratitude

Northrop Space Labs' Tyler McCoy, senior engineer, received the plaudits of Washington, D.C. and fellow guests for his actions that are credited with saving lives and preventing possible injury in the Mayflower Hotel fire last Thursday.

Tyler, on a business trip to the Capitol, smelled smoke at 12:30 a.m. as he was getting ready for bed.

He looked into the hall. It was full of smoke. He tried to call the desk but the telephone system was automatic. Rather than taking time to search for numbers, he dialed 0 and got long distance. He gave the operator the alarm.

He raised an outcry outside in the hall.

Although the smoke was deadly, he was able to spot the fire escape door a short distance from his own door. He found that there was a layer of breathable air close to the floor.

He stayed to direct several frantic people to the fire escape

before making his own escape. They had to stoop low or crawl to avoid the poisonous fumes.

Two heavy sleepers nearby his room failed to awake. They died of suffocation.

"I don't think I'm a hero," Tyler said. "I just did a natural thing."

Grateful Washington, other guests in the hotel and the newspapers think differently. Said Seattle businessman Irving Wallace, "This man is really a hero. If it hadn't been for him, there would have been a great tragedy."

Northrop Space Labs' General Manager Richard E. Horner, also at the Mayflower and asleep in his room, stated, "His cries of fire awoke me in time. I am very grateful."

Tyler's lifesaving actions were flashed throughout the nation by the wire services.

"I really didn't do that much," he said. "But I'm glad I did as much as I did."

The fire is said to have started from a cigarette burning a chair.





**RIDES WANTED**

**7 a.m. — 3:45 p.m.**

INGLEWOOD AVE. & 190TH, Torrance. C. Y. Caplan, ext. 2568, FR 1-4181. 2  
SPENCER & WEST HAWTHORNE BLVD., Torrance. M. L. Harrelson, ext. 527. 2  
JERSEY & 168TH, Artesia. Oliver Goethe, ext. 75. 2

**7:30 a.m. — 4:15 p.m.**

STUDEBAKER & ROSECRANS, Norwalk. M. R. Kina, 2669, UN 3-6803. 3  
PALOS VERDES BLVD. & SEPULVEDA, Torrance. Georgia Sanford, ext. 655 472, 371-4849. 3  
TORRANCE BLVD. & HAWTHORNE BLVD., Torrance. Adelaide Fox, ext. 1910. 3

**8 a.m. — 4:45 p.m.**

WILSHIRE & FEDERAL, West Los Angeles. Will meet at on-ramp of San Diego Freeway & Wilshire. Sue Burris, ext. 2123, 2470. 5  
PRAIRIE & EAST 139TH ST., Hawthorne. Delores Messerli, ext. 2434. 5  
FIRESTONE & LAKEWOOD, Downey. Will ride or drive with anyone within proximity or someone coming from areas farther out via Buena Park, Anaheim, La Habra, Santa Fe Springs. Ron Beller, ext. 2177, TO 1-9320. 5

**3:45 p.m. — 1:15 a.m.**

COMPTON AVE. & EL SEGUNDO, Compton. Calvin R. Palmer, ext. 601, SP 4-0532. 6  
ARTESIA & PIONEER, Artesia. Louis Sipes, tie line 481, ext. 38. 6

**RIDES OFFERED**

**7 a.m. — 3:45 p.m.**

JERSEY & 168TH, Artesia. Oliver Goethe, ext. 75. 12

**8 a.m. — 4:45 p.m.**

FIRESTONE & LAKEWOOD, Downey. Will ride or drive with anyone within proximity or someone coming from areas farther out via Buena Park, Anaheim, La Habra, Santa Fe Springs. Ron Beller, ext. 2177, TO 1-9320. 15

**BBSF Classified Ads**

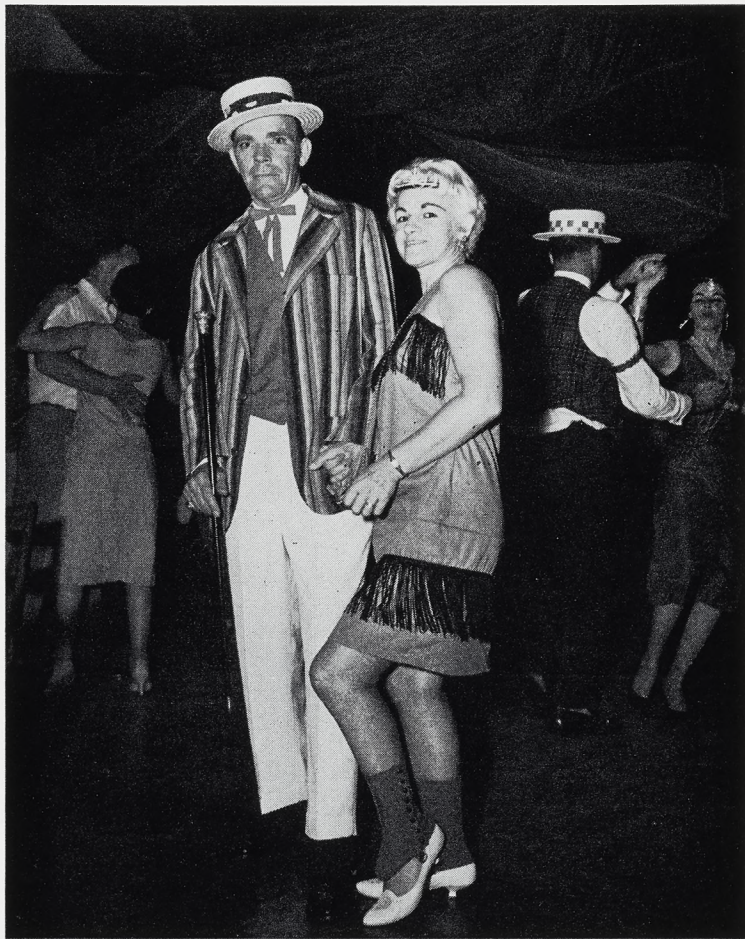
BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

**FOR SALE**

B-33 MOTORCYCLE, 1956 BSA, full road equip., new eng., Buco saddle bags, \$450. FR 1-1445. A  
RANGE, full-size, Gaffers & Sattler, large oven & broiler, auto. timers, \$150. 676-5622. A  
SKI BOOTS, size 6, \$5. 831-6973. A  
HOUSE, 3-bdrm., carpeted, custom draped, built-ins, North Torrance location, \$23,750; chest, 36"x24", 4-dwr., walnut, \$5; dress form, adjustable-type, \$5. DA 4-7843. A  
FENDER SKIRTS for 1954 Olds, w/ brackets, \$5. OR 1-6692. A  
TYPEWRITER, Remington manual, completely overhauled, pica type, \$50; bunk beds, maple, \$25. OS 6-0049. A  
FORD FAIRLANE, 1957, conv., white, p/steering, & brakes, & windows, \$1100. DA 3-2649. A  
BASSINETT, folding frame, covered in yellow, \$8; divan, green, converts into bed, & matching chair, \$40. OS 9-4808 after 5:00 p.m. A  
UMBRELLA TENT, hvy. duty, folding camp cot & mattress, freezer & chemicals, & hammock, \$60 or sell individually. FR 8-4574. A  
PUPS, English bulldog, 8-wk-old, AKC reg., 2 males, 1 female, championship stock \$150 & up. EA 2-3667. A  
CAMPER, pickup, 9', factory made, fully insulated, ice box & cabinets, \$525. UN 8-6524. A  
5 LOTS, Inglewood Park Cemetery, El Portal section, double interment privileges, \$400 ea, plus transfer fees, cash or terms. DA 9-9464. A  
CUSTOM CABINET for Hi-Fi, records, tuner, turntable, walnut stained mahogany, 48" w. x 39" h. x 19" d., cost \$120. \$35. EX 7-0431. A  
TABLE, mahogany, drop leaf ext., 3 leaves, 4 chairs, table pads, \$90; wing-back chair, \$35; lamp, green glass base, \$5; club chair, \$15. OS 6-2383. A



**SEE YOU AT THE BALL**—In the theme of the Roaring 20's Ball slated for Saturday, April 21, at the Mayflower Ballroom in Inglewood are Betty and Mosey Reid. She works in Personnel Activities. Photo, taken at last year's Roaring 20's, helps illustrate what may be expected in the way of costume activity. There will be prizes for the best getups, a Charleston contest and a twist contest. Price is \$1.50 which includes a gigantic buffet-style dinner.

**FOR SALE**

FORD VICTORIA, 1951, automatic trans., \$95. OS 5-2294. A  
TRAILER OR CAMPER SEATS, 2, 54" long, 18" wide, folds down for bed, \$10. OR 0-6896. A  
VALVE COVERS, 1 set Moon-finned aluminum, \$25; dual carb. manifold, Edmunds, for straight 8 Pontiac, \$10; 1953 Cadillac heads, 1 pair, ported & polished, \$40. PL 5-8866. A  
DODGE DART, 1960, sport hd. top, \$1400; Ford, 1957, stick shift, r/h, \$550. DA 4-7623. A  
CO-OP APT., downtown Inglewood, under 1-yr-old, \$20,500. OR 7-7400. A  
POWER MOWER, 20", Craftsman, reel-type, w/clutch, & power edger, trimmer, \$100. WE 5-0493. A  
CAMERA, Kodak Signet 50, 35mm, flash attachments, leather case, \$75. Box 801. A  
BOAT, 15' sports runabout, 45 hp Mercury elec., remote control, wraparound windshield, mahogany deck, chrome & accessories, plus trailer, 30 mph or 2 mph troll. \$795. OS 6-6390. A  
PICKUP TRUCK, 1949, KBI International 6-cyl., 4-spd. transmission, oversize snow tires on rear. \$350. OS 6-3792. A  
TRUCK TIRE, 700-17, 8-ply, new recap, \$10; Venetian blinds, several sizes, \$1 ea. PL 5-4497. A  
SKI PANTS, size 10 girl's White Stag, & ski boots, size 2, \$5 for both. FP 7-4770. A  
BABY BED, mattress & spring, sides raise & lower. \$19. PL 4-9637. A  
TENT, 9 1/2' x 11' sideroom, 3 windows, canvas floor, no center pole, \$55. OR 2-9449. A

**Buy Bonds**

WASHER, late model Kenmore, wringer-type. \$40. OS 9-6982. A  
FORMALS, pale pink & pale green, floor length, size 15-16, \$25; violin, adult, needs strinas. \$10. EX 7-2055. A  
FORD, 1956, V-8 Country Sedan sta. wagon, power steering, auto. trans, r/h, tinted glass, w/w, yellow & white, \$695. EA 2-4269. A  
GOLF CLUBS, 8 irons, 3 woods, McGregor registered SST, w/bag, \$50; snow skis, 3 pr. w/poles & car top rack, \$50; sliding glass door, 6'x6'-8", brand new, still in carton, \$60; dinahy, 8' plywood, \$25. DA 4-1578. A  
VACUUM CLEANER, 1961 Kirby, w/attachments, including Handi-Butler & floor polisher. \$115. SP 2-2387. A  
APT. BLDG., 5-unit, good rental area, submit down payment, terms to suit, will also accept trust deeds as part down. \$30,600. FR 5-2866. A  
SINK, double, 32"x21". w/Dishmaster faucet. \$20. PL 6-0768. A  
GAS RANGE, table top-type, w/cover, \$5. GA 4-6383. A

**Deep Sea Fishing Trips All Set, Tickets at P-A**

The NRC deep sea charter trips for this summer are now scheduled.

The boat will be the New Longfin. Skipper is Russ Izor.

Departure times for all outings will be 1:45 a.m. unless albacore change the plans.

Cost for each trip is \$12 a passenger with a limit of 15 passengers.

Reservations are available at Personnel Activities and Norcrafters fishermen are advised that the fare must be paid two weeks in advance.

The dates are April 28, May

26, June 23, July 28, August 25, and September 22.

**LEAGUES NOW FORMING Softball Bowling Golf**

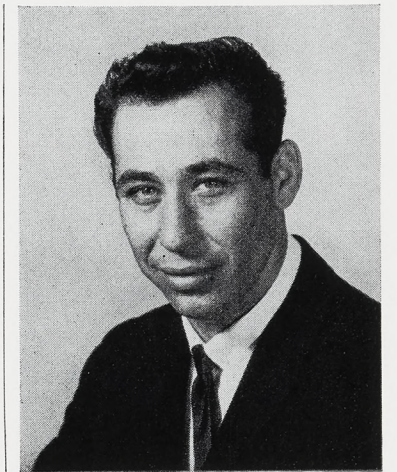
Entry forms and information at Personnel Activities. Telephone 2784.

**NRC Softball Will Limber You Up, Says Joe Perez**

Softball season is here. Department teams have started to form at Norair and Nortronics ES&E Divisions and practice has begun.

Preseason softball tournaments will be conducted at Alondra Park, located on Prairie Avenue at Manhattan Beach Boulevard. To enroll, obtain team rosters or individual entry forms at Personnel Activities, Extension 2784.

**BY JOE PEREZ  
NRC SOFTBALL  
COMMISSIONER**



Individual awards will be presented to tournament winners. Interested player or player's wife must be employed at Norair or Nortronics ES&E to be eligible.

Two preseason tournaments will begin in April. Slow pitch is aimed at those fellows who don't necessarily want to burn up the base paths and is played with a 16" ball on Tuesday evenings, 5:30 p.m. to 10 p.m., commencing April 24. Regulation pitch with a 12" ball begins on Wednesday evenings, 5:30 p.m. to 10 p.m., on April 25.

A managers' meeting was held April 4 for the purpose of voting on rules. The next managers' meeting will be scheduled at the conclusion of the preseason tournament.

NRC furnishes, free of charge, facilities, umpires, scorekeepers, balls, bats, and masks. All you need is a glove and an old pair of jeans and you're equipped, ready for action.

League play will begin June 4 with two NRC-sponsored leagues: slow pitch on Tuesday evenings and regulation pitch on Wednesday evenings at Alondra Park.

Forget the sore arms and legs. It all goes away with practice. All indications are pointing to a large and thrilling season. Make sure you're part of it.

Start a campaign for players within your department. Form a team and join the fun. Everyone can enter into the season spirit by attending the games and root-

ing your department team on to victory.

You'll feel "foul" tomorrow if you don't join today.

**CAMERA FOLK TO HOLD SALON**

The NRC Camera Club will hold their annual camera salon next Wednesday, April 18, it is announced by Howard Butler, commissioner.

The event will take place at the Clubhouse Annex at 8 p.m.

Awards will be presented for black and white, color, and stereo. Three prominent professionals will select the winners.

A slide show, international in theme, will add to the interest factor.

Admission is free.

**NRC ART CLUB TO HEAR TALK, SEE SLIDES**

The NRC Art Club, Stewart Luce, commissioner, reveals that the Club will have Ruth Saturensky as guest speaker at their meeting April 19.

Mrs. Saturensky, a teacher and prominent artist, will speak on her forthcoming trip to Europe from the artists' point of view.

In addition, three art films will be shown.

The meeting will take place at Joe Kalina's Studio, 3234 West 157 Street, Gardena.

**SAN CLEMENTE TOURNEY NEXT FOR NRC GOLF**

The next NRC golf tournament is scheduled to be held at San Clemente Country Club.

Entries will open at Personnel Activities April 16. Date of play is April 21. Tee off time is 9:30 a.m. with a limit of 100 golfers. Green fee is \$3 plus 50 cents prize fund for a total of \$3.50.

**Northrop-Norair News**

VOL. 20 NO. 8

1001 E. Broadway, Hawthorne, Calif.  
**A NORTHROP CORPORATION PUBLICATION**

Published every other Wednesday  
**NORAIR DIVISION**

**CHARLES BRADFORD, Editor**

Permission to republish material with credit to Northrop-Norair News will be granted. News office extension—2456. Outside lines—OR 8-9111, OS 5-4611.

**CHILD CARE WANTED**

CHILD CARE WANTED, 6-yr-old boy, motherless home, Lomita, 5 days, transportation required. DA 6-6526 after 6 p.m. H

**PERSONALS**

GIRL to share apt. from June to September. Will be joining Northrop for summer employment from Cornell University. Box 803. L



## Presentation



**HONOR FOR THE SECRETARY**—Dr. Vernon B. Sheblak, Norair chief, Management Development and Training, presents Labor Secretary Arthur J. Goldberg with bronze plaque certifying his honorary membership in the American Society of Training Directors. Ceremony took place in Washington, D.C. Honor was given Secretary Goldberg for his "outstanding leadership in the field of training." Plaque states that the secretary "distinguished himself in emphasizing the critical need to train and restrain men and women, particularly in the depressed labor areas. Dr. Sheblak is president of the ASTD.

## NEWS BRIEFS

(Continued from Page 1)

and Norair general manager; and C. R. Gates, manager, Marketing department . . . Later they were taken on tour of T-38 production line by Bob Lloyd, vice-president and assistant general manager, Operations . . . Dr. Schweb's party consisted of Dr. Victor K. Heyman, office of the Comptroller, OSD; Colonel Arlie J. Blood, office of director and deputy chief of staff, Operations; and Colonel Robert W. Gates, chief, Tactical Air Division and directorate of Operational Requirements. Pilots on the demonstration flights were Major Jim Anthony, Northrop deputy AFPR and T-38 project officer and Lew Nelson, director, Test section.

**SOVIET SCIENCE** — Dr. F. J. Krieger, physical scientist, RAND Corporation, Santa Monica, talked to members of the Division Management Council last week, on "Appraising Soviet Astronautics". Dr. Krieger who predicted Soviet Sputniks before they were placed in orbit and who is author of "Behind the Sputniks", a book describing these developments in the Soviet Union, has been engaged in research at RAND since 1946. His fields of interest include the chemistry and physics of rocketry and astronautics, and the science capabilities of the Soviet Union. Dr. Krieger is the author of a number of technical papers on the transport properties of polar gases, physical properties of chemical and nuclear rocket propellants, and Soviet science and astronautics.

**FIRST LADY**—Eutha Dame, R5830, Palmdale area dispatcher, received her 10-year pin last week. Ceremony was attended by many friends and well-wishers. Tom McCracken, Base administrator, officiated.

**T-38 TOUR**—L. C. Breckenridge, acting manager and Norair senior representative, Dayton office, reports that the Talon demonstration airplane made 20 flights at Wright-Patterson Air Force Base with key military personnel aboard. Major General Cecil E. Combs, commandant, Institute of Technology, Air University, USAF, was one of those to fly the airplane. Stated Mr. Breckenridge, "The favorable response to the T-38 was most gratifying. In addition to splendid performance and flight characteristics, the airplane also demonstrated an outstanding ready rate capability. It maintained a tight schedule all the way under severe handicaps which included strange fields and far less than normal ground support. The T-38 is a fine little salesman and an ambassador of good will wherever it goes." . . . Following demonstrations at Wright-Patterson AFB, the airplane flew to Norfolk for 15 demonstration flights at headquarters, Commander, Naval Air Atlantic; then to Patuxent River, Maryland for eight flights at the Naval Air Test Center (all in a single day); then to Andrews AFB, Washington, D.C., for three more flights. Pensacola, Florida and the Naval Air Training Command was next in line. The last stop, Corpus Christi, Texas, headquarters, Naval Air Advanced Training, Home today. Norcrafter team with the airplane consisted of Don Papish, Hank Chouteau and Drury Wood, pilots; crew—Monte Montgomery, chief; Tom Shakelford, Ed Zimmerman, and Ed Caraway.

## Aikido—Way of the Mind

If you want your arm broken, take liberties with the pretty brunette secretary in Structural Analysis branch.

Her name is Ginny Ferguson. She weighs a trim 118 pounds, and her measurements are 35½—26—35½. But don't let this fool you. For the sake of a photograph, while smiling, she tossed 200-pound Norair photographer Dave Saldana crashing to the floor.

Don't let this fool you either. Ginny is every inch of the 35½—26—35½ a lady.

Aikido—"Way of the Mind"—is her hobby. It's a martial defensive art. A type of judo, but much nicer for a woman. Its techniques, 150 of them to be used in countering any kind of bodily attack including with weapons, have been handed down from the ancient code of the samurai of Japan.

### YOU ARE STANDING

"It's an ideal defense for a woman," says Ginny. "Poise, grace, and balance are more important than strength. You go with him, never against him, to bring about his downfall. Never is your strength pitted against the strength of your assailant. When you repel an attack with aikido, your attacker winds up on the ground. You are standing. No vulgar rolling in the dirt for those who know aikido."

The secret of aikido, pronounced "eye key dough" is surprise, confidence in yourself, and speed.

"And it takes practice."

Two years ago, Ginny saw a sign on Hawthorne Boulevard that said "Aikido Lessons." She walked in. Asked what it was all about.

A year later, she demonstrated aikido at the Sportsman's Show. She demonstrated again this year. She has won the coveted green belt which means she is in the fourth kyu. There are

seven kyus. You start at seven and work through. She wants a black belt. This is number one kyu. There are only five aikido black belts in the entire United States.

Ginny teaches feminine friends aikido at a school in Lomita. She doesn't charge for lessons although the school does. Ginny gets her pay in lessons to advance her toward her black belt dream.

### YOUNGEST STUDENT

"My youngest student is a little girl 10 years old," she said. "My oldest is a woman 50 years old. She is quick and nimble as a cat. You should see her." Ginny is also very proud of the fact that she teaches policewomen this defensive art. Not to be forgotten in the list of Ginny's aikido students are her two children, Stanley, 6, and Sheri Ellen, 5. "They catch on quick," she says. "You'd be surprised at their progress and self-reliance."

What makes a secretary aikido hobbyist tick? For a lady wrestler, she is about as woman-like as they come. Loves to decorate cakes, collects classical records, plays the piano, dances, sings, writes poetry.

### WRITES POETRY

This is one of her verses written while a student at Washington High:

*Oh, how I love to hear the breeze,  
The way it echoes through the trees,  
It sounds like music, soft and low,  
So sweet with melody aflow.  
I hear bells ringing o'er the trees  
With soft and lovely melodies,  
Oh, Mother Wind, blow high and low  
Oh, Mother Wind, just blow and blow.*

She won high honors as a majorette and baton twirler. She loves to engage in charity with her dancing and singing and now her aikido.

Another key to her character

is a passion for self-improvement. She speaks Spanish, she studies German at home, will study Japanese next. She is a first rate secretary. Is trained in the Stenotype machine. "I'm rusty now," she confesses. "But I'm okay with the Gregg." She has been attending Harbor Junior College, nights, for the past two years studying liberal arts. She collects oriental art objects. She loves to read and is accumulating her own library.

"You must exercise the mind as well as the body," she said. "To be fit, you must do both."

She loves pets, animals, creatures of all kinds. Right now she has a 6½-foot boa constrictor named Carmen. "Carmen is very tame and gentle," she said. "She likes being our pet and we like her. Nursed her through a serious illness a short time ago."

Athletics are as natural to Ginny as cooking and knitting. She is an ice skater, a fencer, swimmer, skin diver, likes to ride tandem on motorcycles, is proud owner of a 22 rifle and a good shot with it.

### NEVER YET IN "ANGER"

But back to aikido. Obviously, it is a way of protection for the weaker sex. She has never hurt anyone in practice. She has never had to use it in "anger". But she would if she had to.

And if a woman is attacked and uses aikido as a defense, she must not be kidding. "Use it with all your will and without mercy," says Ginny. "If you fail, the surprise element is gone. You will never get another chance and you, in turn, will be at the mercy of your attacker's superior strength."

Perhaps she has something that others of her sex could use. Feminine knowledge of aikido might change some of those black headlines we read over our morning coffee.

Instead of "Thug Beats, Kidnaps Woman", it would say "Masher Hospitalized With Broken Elbow and a Ruined Adam's Apple."

## SECRETARIES TO STAGE OFFICE CONFERENCE

Pat Carlberg, secretary to Paul Wierk, director, Engineering Administration, announces that the Airborne Chapter, National Secretaries Association (International) will participate with the University Extension, University of California, in a one-day conference "Tomorrow is Today."

The meeting will be held April 14 at Sproul Hall, UCLA campus. Registration and coffee begin at 9 a.m.

Introduction this year will be handled by Margaret Boles, Northrop Corporate office. She is NSA's education committee chairman.

Subjects to be discussed include "Techniques of Managing an Office"; "Streamlining Your Written Communications"; "Understanding Your Impact on Others"; "Personal Investment Planning."

Enrollment fee is \$6 which includes the luncheon.

Enrollment should be made at the Information office, University Extension, 813 South Hill Street.



**ON THE DECK**—Ginny applies aikido to Norair photographer, 200-pound Dave Saldana. It's very hard on the elbows. Note Dave's coattails. This tells how hard he fell. Ginny has earned the green belt. Is training for top honor, the black belt.





## NEWS BRIEFS

**EUROPEAN TOUR**—Norair Division Assistant General Manager and Vice-president, Technical, Welko Gasich, recently returned from business trip to England and Spain. In England, Mr. Gasich discussed with British aerospace leaders their developments in V/STOL relative to Norair's vital and longstanding interest in this field. In commenting to News Briefs he stated, "They are more advanced than we are in V/STOL . . . Their contributions to the art as demonstrated in flying airplanes are most significant and revealing." . . . In Spain, Mr. Gasich called on that country's air force leaders and the U.S. MAAG office. He also visited Spanish aircraft manufacturing establishments. "I was impressed by their modern facilities," he said. "They have built their industry on some of the finest test and manufacturing equipment the world has to offer. Coupled with a low labor rate, the Spanish have an outstanding manufacturing potential in the free world market."

**SECRETARY OF THE YEAR**—Nancy Mabrey, secretary to Herman McDonald, Northrop representative, Cape Canaveral, has been named "Secretary of the Year" by the Cocoa Beach Chapter, National Secretaries Association. Miss Mabrey was to receive her award at the April banquet of the group. At the same meeting she was named to present the Cocoa Beach NSA's \$100 scholarship to a member of that city's High School Future Secretaries Association.

**LFC SYMPOSIUM**—The Air Force and the Federal Aviation Agency will co-host a technical briefing on Laminar Flow Control 3 and 4 May at Wright-Patterson Air Force Base, it is announced by Corporation Vice-president and Norair General Manager Dick Nolan. Mr. Gasich will lead Norair's effort in support of the event. The meeting will consist of three half-day sessions devoted to (1) recent achievements in the field of low drag boundary layer suction; (2) design development; and (3) propulsion systems and aircraft application studies. An audience representative of all phases of aerospace activity will be in attendance including military, governmental agencies, aerospace manufacturers, and airline companies.

## Company Team To Middletown To Help Plan T-38 Support

Top level management personnel from Northrop Corporation and Norair visited MAAMA recently to review the T-38 aircraft program and discuss logistics support actions. The team included John R. Alison, Corporate vice-president, Customer Relations; V. L. Anderson, Corporate staff, Development Planning; F. D. Mathes, Norair director, Customer Service; and R. R. Hutchins, Norair general supervisor, Logistics. R. H. Keleher, Norair representative at MAAMA was

also in attendance.

A briefing on the growing T-38 program was given to Major General F. H. Miller, MAAMA commander and other MAAMA representatives including Colonel A. A. Riemony, directorate of Materiel Management; Colonel N. J. Beaudrias, director of Procurement and Production; Colonel T. D. White, executive officer; Colonel Cletus Wray, chief of the Aircraft Division; Directorate of Materiel Management and other Aircraft Division representatives.

(Continued on Page 2)



**T-38 TALK**—T-38A aircraft for which MAAMA serves as Support System Manager is being discussed by MAAMA Commander Major General F. H. Miller, at right, and Northrop Corporation Vice-president, Customer Relations, John R. Alison. Also in the photograph are from left, R. H. Keleher, Norair representative at MAAMA; Colonel A. A. Riemony, director, Materiel Management, MAAMA; and F. D. Mathes, director of Customer Service for Norair.

## FREEDOM BOND CAMPAIGN SET FOR NORAIR MAY 7 TO 18

"Underwrite Your Country's Might".

All Divisions and facilities of

### C-U Assets Reported at \$2 Million

The Northrop Credit Union's gross assets have increased over \$220,000 in the past year and now stand at \$2,091,237.03 as of March 31, end of the first quarter, it is announced by Walter Gage, Credit Union treasurer and manager.

Depositors earned 5½ per cent last calendar year, up one per cent from 1960, it was announced earlier. (Norair News, February 28, 1962.)

Interesting sidelight is that during the Credit Union's 15½-year history, (the organization was first started by Norcrafters on October 2, 1946), clearings have amounted to over \$125,620,374.56, an eighth of a billion dollars.

Loans during this time numbered 85,065, for a total of \$21,181,641.98.

The Credit Union has three classes of loans.

(Continued on Page 2)

## Day & Night Blood Bank On May 23

A day and night shift blood bank, the first at Norair in recent years, will be staged Wednesday, May 23, it is announced by Charles Boyle, general supervisor, Personnel Activities.

Bloodmobile location will be the Product Display Building from 2 to 6:40 p.m.

Organization clerks and blood bank representatives will contact all personnel prior to the visit with donor forms. Applications are due at Personnel Activities before the end of shift Monday, May 21.

Transportation will be provided from the main lobby, Plant One; main lobby, Plant Two; Engineering Center lobby; and Plant Three cafeteria.

A tense drama that developed during the last blood bank visit on February 21 has now come to light.

The American National Red Cross had been asked to procure 13 pints of a special type of blood for open-heart surgery. This was 13 pints in addition to that already in stock and there was no more available.

The surgery was scheduled on the day of the Norair blood bank visit.

Red Cross hopefully felt that Norair would produce this special type needed and in the quantity

(Continued on Page 2)

Northrop Corporation have pledged over-the-top participation in the Government's current nationwide Savings Bond Drive.

The campaign will get underway at Norair May 7 and continue for 11 days.

Keynoting the urgent need for a strong America, the slogan picked by officials of the U.S. Treasury Department for the campaign is "Underwrite Your Country's Might".

For the first time since World



THOMAS V. JONES

"... I know of no better way."

War II, the Government has closely linked United States Savings Bonds with financing of national defense and the related space race. So important does it feel this program is that it has designated the first seven months of this year to a "Freedom Bond Drive".

In an announcement to all personnel, all divisions, Northrop President Thomas V. Jones said, "The United States Treas-

ury Department has asked that Northrop support this year's Savings Bond Drive and I have assured them that we would do so.

"I regard this as a patriotic duty. Moreover, every one of us should have a plan for establishing a regular savings program. I know of no better way to do this than through the purchase of the bonds of our own Government."

Charles Boyle, general supervisor, Personnel Activities, Norair, has been named chairman of a Corporate Committee to handle details of the drive and will also be chairman for Norair Division.

In preparation for the drive, a "Freedom Bond Drive" team composed of Mr. Boyle and Robert V. Hughes, U.S. Treasury Department, Savings Bond Division area manager, will visit all divisions to indoctrinate clerks and other key persons in methods to be used in bringing information on the campaign to personnel.

Arrangements are being made for outlying facilities to have representation at the briefing sessions.

Nortronics divisions in Massachusetts, Precision Products department and Marine Equipment department will participate in bond campaigns launched in their own communities.

Bond purchases as in the past will be based on payroll deduction. Personnel who are already purchasing bonds will have the opportunity to review and if possible increase their weekly deduction. Personnel who are not now buying bonds will receive forms and information on starting their individual programs.

## Materiel Writes Efficiency Records in Talon Buying

Norair Materiel, Carl Hood, director, now in the midst of record purchases for the T-38 program, has reported that Division procurement for fiscal 1961 exceeded that of a year earlier by 47.06 per cent.

At the same time acquisition costs decreased by 19.11 per cent.

The department made significant progress in reducing Northrop-owned burden supply inventories, achieving an average monthly dollar decrease of 28 per cent when compared with the previous year's investment.

Overall, the total dollar inventory level remained constant, despite accelerated Talon production schedules.

Stated Mr. Hood, "Improved efficiency in Materiel was due to our program objective to keep pace with Northrop Corporation and Department of Defense emphasis on increased product pricing capability.

"Concentration was in four principal areas:

- (1) Technical competence in procurement methods and skills.
- (2) Increased use of effective supplier capabilities.
- (3) Supplier research education and assistance.
- (4) Customer - industry improved liaison and communications."

Some salient facts:

Inbound tonnage remained the same while number of purchase orders decreased by 10 per cent. Number of suppliers utilized, however, increased by 3 per cent.

Dollar value of awards to small business increased by 50 per cent.

Number of pickups and deliveries decreased by 26 per cent. Requisitions decreased by 17 per cent.

Burden supplies decreased by 26 per cent, and significantly burden supply turnover increased

(Continued on Page 2)



## Honor for Dick Greetan



**GOLD TITAN AWARD**—Norcraft R. L. "Dick" Greetan, second left, is shown being congratulated by Warren Opitz, The Martin Company manager, Complex 3A of the Titan-2 Site at Rapid City, South Dakota. Shown also on the left, Max Fayrweather, Northrop-Norair T-2 Site manager, and at right is John Healey, The Martin Company T-2 Site manager.

Norcraft R. L. "Dick" Greetan won The Martin Company Gold Titan Award at the T-2 Site for the month of March 1962. This award is made to the individual who is adjudged to have performed in an outstanding manner over and above his normal assignment. An excerpt from the data in making the award follows:

"Mr. Greetan, test conductor, reported for work first shift Saturday, March 10, 1962, in preparation for emplacing the missiles in two silos which activity was scheduled to begin on the first shift Saturday. Weather conditions necessitated that this be cancelled.

"Mr. Greetan remained on complex from Saturday through Tuesday morning when the complex was finally opened. He relieved Complex Operations Group management such that they could have rest during their fight against the elements. Although his job normally is not in the Complex Operations Group, he demonstrated an exceptional ability to comprehend the problems, reach decisions and keep the program moving such that when the weather did break we would be in a position to continue work as planned.

"Mr. Greetan left the complex at noon, Tuesday. It was decided to emplace a missile beginning at 1800 hours, Tuesday evening. Without being called, Mr. Greetan returned to the complex to assume his normal duties and conducted the emplacement of missiles in two silos beginning at 1800 hours, Tuesday, through 1600 hours on Wednesday.

"Because of his ingenuity in the deployment of people and equipment, money was saved. Time was saved because of his presence on the job and his knowledge and ability to work around a problem when one developed.

"He contributed the major part of direction for the emplacing of two missiles in a very timely manner."

Prior to his assignment to the T-2 Site, Dick was a factory specialist on the Snark line. His assignment at the T-2 Site is test conductor, Complex 3A.

## Page Gets Army Contract, Starts On Joint Venture

Page Communications Engineers, Inc., Northrop Corporation Washington subsidiary, has been awarded a \$915,000 contract for maintenance and operation of the 7500-mile U.S. Army Pacific Scatter Communications System.

The system, utilizing ionospheric and tropospheric scatter propagation, extends from Hawaii to the Philippines and Okinawa. Announcement of the award was made by Page President Joseph A. Waldschmitt.

Under the contract, Page will provide engineers, technicians, emergency parts, training, site support, antenna upkeep, data analysis, and Diesel-generator operation and overhaul. The contract will run through January 1963. Page was prime contractor for design and installation of the system, which was completed and turned over to the U.S. Army Signal Corps in 1960.

Page also will participate in a newly announced Air Force \$5,500,000 contract for a joint venture association for Minuteman

Missile Communications Network at Ellsworth Air Force Base, South Dakota.

The joint venture, with headquarters at Rapid City, South Dakota, consists of Page Communications Engineers, Inc.; Riverside Construction Corporation, Fort Worth, Texas, a subsidiary of Morrison-Knudsen Co.; and Curran and Company of Great Falls, Montana.

The contract calls for construction to begin in April 1962 on the installation and check out of a cable communications network for the Minuteman Missile Site. Completion of the project is expected in mid-1963.

## Gage

(Continued from Page 1)

(1) Home improvement loans, maximum \$3000 with 5 years to repay.

(2) Automobile loans—financing of new and used car purchases and refinancing.

(3) Salary loans up to \$400.

## Materiel

(Continued from Page 1)

during the year from 3.66 times to 4.60 times meaning that dollars formerly tied up in items waiting on the shelf could be put to active use elsewhere.

Proof of Materiel's program through more effective competition, use of scientific price analysis, and added opportunity to small business, is reflected in purchasing case histories of critical T-38 parts and components.

Serving as examples:

The power transmission shaft. By pre-planning acquisition of design and manufacturing rights and increasing the competitive base particularly in the area of small business, this item has recorded a cost improvement of 82 per cent.

T-38 fuel cells. Effective competition and re-assumption of management risks, coupled with Technical and Quality Control cooperation, brought about an improvement for this high cost equipment of 56 per cent. The price is now 40 per cent below the industry average.

To further brighten the picture, Mr. Hood indicates procurement activity for the current fiscal year will again be on the rise. "We should show 6 per cent increase over last year," he said.

## Red Cross

(Continued from Page 1)

required. A little prayer was said that their hopes would be fulfilled.

Norcrafters came through. By 9:05 a.m. 13 pints of the precious lifesaving fluid was sped by a station wagon to the hospital.

The operation was performed successfully.

## T-38 Plan

(Continued from Page 1)

MAAMA serves as the Support System Manager for the T-38 aircraft and is responsible for logistics support management of the program. T-38 aircraft are presently on station at Edwards AFB, Randolph AFB, and Webb AFB. Other ATC bases are scheduled for activation in the near future. With Category III test program at an end and with the increasing quantity of aircraft being delivered to ATC, MAAMA's responsibilities are increasing at a rapid rate.

The T-38 section, within the Aircraft Division, Directorate of Materiel Management, is managed by Charles Condran. Serving as logistics officers are Captains T. B. Smith, Anthony Mancuso and Raymond Manari. The production management function is monitored by H. P. Witmer and the technical services function is under the leadership of L. P. Shively.

## Northrop-Norair News

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CHARLES BRADFORD, Editor

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**HAWTHORNE WELCOME TO ROTARIANS**—Hawthorne Municipal Airport Manager Richard Kessler, left, is highly pleased with oil mural showing view of airport that many flying Rotarians will see as they land for the 53rd Annual Rotary International Convention, June 3 to 7. Donated by Northrop Corporation, the mural will be displayed prominently at convention headquarters in the Los Angeles Sports Arena. Mr. Kessler is chairman of the Hawthorne Rotary Club airport welcoming committee. At right is Harland Krug, artist who painted the mural. Charles Boyle, general supervisor, Personnel Activities and a Rotary member, arranged details.

## Daylight Saving Coming Up, Norcrafters in Favor Of

Don't let that alarm clock bug you. It will be ringing early because it is supposed to. After April 29, that is.

On that day, a Sunday, all clocks in California will be advanced one hour to coincide with daylight saving.

Officially when it becomes 12 midnight, April 28, it automatically becomes 1 a.m., morning of April 29.

Daylight saving time continues through the summer to September 30 at which time clocks are set back where they were before.

A few comments from Norcrafters when asked what they thought of daylight saving.

Harry Parker, supervisor, Engineering Field Support, "It ought to be for 365 days a year."

Barbara West, department clerk, Engineering Property Administration, "I just love it."

R. E. Churchill, Aero and Propulsion Sciences engineer, "I

would like to see more days added to daylight saving but I don't know how many."

Rosemary Hussey, Norair News secretary, "I like it better than standard time. I like the extra hour of daylight. Besides, who wants to get home after dark."

Joe Druliner, assistant to the Division treasurer, Finance department, "I think it's wonderful. It ought to be for the year around."

This seems to make it unanimous. Hooray for daylight saving.

## DR. ZALL WRITES BOOK ON TECH REPORT WRITING

Dr. Paul M. Zall, Division Consultant has recently published his latest book "Elements of Technical Report Writing", Harper and Brothers.

The work is specifically for the professional man who is not a writer but finds himself having to write a report as part of a larger job.

Dr. Zall assisted Norair in preparing LFC presentations to the Air Force and in establishment of the Proposal group, Technical. He also worked full-time on preparation of the Titan T-2 site activation proposal. Most recently he worked as consultant on the Saturn S-1.

Dr. Zall is associate professor of English and director of Communications Center, Los Angeles State College.







**RIDES WANTED**

**7 a.m. — 3:45 p.m.**

INGLEWOOD AVE. & 190TH, Torrance. C. Y. CAPLAN, ext. 2568, FR 1-4181. 2  
BOLSA & VERANO, Santa Ana. Walter Rutter, tie line 481, ext. 97. 2

JERSEY & 168TH, Artesia. Oliver Goethe, ext. 75. 2

**7:30 a.m. — 4:15 p.m.**

HAWTHORNE BLVD. & LENNOX BLVD., Lennox. Carol Taylor, ext. 1708, OR 2-1881. 3

**8 a.m. — 4:45 p.m.**

CRENSHAW & ARBOR VITAE, Inglewood. Max Bittner, ext. 619, PL 7-2753. 5

LEFFINGWELL & SANTA GERTRUDES, Whittier. Dodie Scheick, ext. 1904. 943-5602. 5

**RIDES OFFERED**

**7 a.m. — 3:45 p.m.**

JERSEY & 168th, Artesia. Oliver Goethe, ext. 75. 12

**BBSF Classified Ads**

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

**FOR SALE**

HOUSE, 2-bdrm., immaculate, drapes, carpeting, in Manhattan Beach, \$17,700. FR 9-4740. A

CHEVROLET, 1956, 2-dr., power glide, power steering, original owner, \$600. FR 5-5139. A

RENAULT DAUPHINE, 1957, \$300. OS 5-5456. A

BANDSAW, 12" Craftsman, 2-wheel, w/1/3 hp motor, mounted, \$45. OS 6-8768. A

WARDROBE CHEST, Babyline, L-shaped bookcase-desk, rocking chair, \$40. PL 5-2563. A

CHORD ORGAN, Estey, \$150. FR 2-3827. A

FORD, 1956, 4-dr., stick shift, \$370; Pontiac, 1954, r/h, \$200. FR 2-0149. A

BATHINETTE, \$15; bassinett, \$15; Baby Tenda, \$10; car bed, \$5. OS 5-7311. A

ZUNDAPP, 1957, 250 cc, \$165. FR 7-3336. A

TRAVEL TRAILER, 16' Terry, w/w carpet, elec. ice box, side dinette floor plan, elec. brakes, \$895. AT 2-8060. A

RIFLE, Model 99, 300 cal. Savage, lever action, & case, \$70. OR 7-5276. A

STAUFFER TABLE, \$100. PL 6-7284. A

PLYMOUTH DELUX, 1950, 2-dr., good transportation car, \$100. GA 3-2261. A

DIVAN, modern, turquoise, 9' long, washable material, \$125. OR 4-1847. A

ENCYCLOPEDIA SET, American Peoples, w/year books & 20 volumes of children's books, w/blond bookcase, cost \$350; \$175. PL 6-0015. A

DINING ROOM SET, cherry maple, 6 chairs & buffet, \$50. PL 4-4908. A

OUTBOARD MOTOR, Mercury Mark 28, w/remote control, \$215. OS 6-3448. A

TV, 21" Magnavox console, \$75. FR 5-9985. A

COFFEE TABLE, dark mahogany, glass top, 42" long, \$10; shower door & fittings, glass & alum., \$10. AX 4-0727. A

ACCORDION, 120-bass, beginner's, \$100; exercycle, \$100. OS 6-8331. A

TRAILER, all steel, covered, camp or utility, 4'x6' bed, good tires, '62 license, \$100. TE 3-4028. A

APT. BLDG., 5-unit, good rental area, developing steadily, will negotiate down payment & terms satisfactory to buyer, \$30,600. FR 5-2866. A

AUTO, WASHER, 1957, Frigidaire, new switch & rebuilt motor, \$25; sofa chair, \$8; blonde coffee table, \$7; blonde end table, \$5; lamp, \$3. TE 4-7823. A

FORD V-8, 1956, 4-dr. sedan, stick shift, w/overdrive, \$250. 834-2845. A

HOUSE TRAILER, 14', 1953 Crown, \$400. OR 1-1660. A

R1 LOT, 68'x154', in Palmdale, sewer & utilities in, \$2000, w/low down payment. FR 1-1308. A

OUTBOARD, Scott, 7 1/2 hp, new, full gear shift, remote tank, bailomatic, \$195. DU 4-4017. A

FORD, 1957, Custom 300, 2-dr., power steering, w/w, automatic trans., 312 ena., dlx. radio, rear speaker, \$900. FR 1-4704 after 5 p.m. & weekends. A

TRIPOD SCREEN, radiant portable, 50"x50", \$12; folding chairs, 2, black metal w/red upholstered seat, \$1.50 ea. OR 7-9389. A

**Basketball Champs**



**THE WINNERS**—Norair Elites, proud winners in the final playoffs with Nortronics ES&E, assemble for trophy presentation and photograph. From left, Jack Jones, guard; Bill Greene, guard and commissioner; Gary Bunn, forward and league's most valuable defensive player; Preston Dills, forward and playing manager; Greg Halberg, forward and Northrop's most valuable player; Roland Sundberg, center; Tom Lusk, forward; and Don Greco, guard and league's third leading scorer. The Elites won the Nortronics contest 76 to 69.

**FOR SALE**

MERCURY MONTEREY, 1956, black, 2-dr., h/top, p/steering, auto. trans., orig. owner, \$600. SY 6-2595. A

TRAILER, 30', 1955, Columbia, tandem axle, front & rear door, Frigidaire, stove, hot water heater, full bath, panel rcy heating, loads of closet space, \$550 dn. & take over payments 32 months at \$36.96. FR 5-4440. A

CORVAIR, 1960, stick shift, r/h, \$1325. 370-2762. A

CHEVROLET CLUB COUPE, 1958, 3200 miles, 6-cyl., stick shift, \$745. OR 7-3089. A

UPRIGHT PIANO, Conway, \$100. FR 9-2068. A

BABY BED, mattress & spring, sides lower, \$19. PL 4-9637. A

RUNABOUT, 15', 3/4 plywood, alased, 64" beam, controls, 3 life jackets, 10'x18' tarp cover, 5 gal. gas can, compass & other access., Evinrude, 35 hp, low mileage, w/trailer, \$500. OS 6-6360. A

COOLER CHEST, Stacold, portable, 12" high x 12" wide x 20" long, 1 tray, 50-lb. capacity, \$6; power mower, 18" Toro, reel-type, \$35. DA 9-2893. A

LIQUEUR CABINETS, custom built, matching units, \$25 ea. or both for \$45. OS 9-5650. A

HI-FI SET, electro voice Regency enc. w/D-130 Jim Lansing speaker; record changer, Packard Bell; amplifier, Harman Kardon, 10 watt; metronome AM-FM tuner, \$165. PL 6-5846. A

REFRIGERATION AIR CONDITIONERS, 2, 1 1/2-ton Vornado, \$85; 3/4-ton Remington, \$40; gas heaters, moveable, circulating-type, large, \$5, small \$2.50. FR 8-5744. A

HOUSE, 2-yr-old, Colonial-style, 3-bdrm., 1 1/2 baths, corner fireplace, 3 picture windows, ocean view opposite Catalina, excellent neighborhood for children, near school, \$1000 below appraisal value, cash to loan negotiable, G. I. loan 5 1/4%, \$25,995. TE 3-6157 after 6 p.m. A

**WANTED TO BUY**

TWIN BEDROOM SET, in good condition. DA 4-7623. B

DODGE engine, 1950-52 in good condition. MA 5-0577. B

RUBBER HIP BOOTS, 2 pr., size 8 to 11, 1 pr. lady's, 4 1/2 to 7. PL 6-9775. B

BICYCLES, 2 girl's 26", 2 tricycles. FA 8-6698. B

HOME in Palos Verdes, Rollina Hills area, need 4-bdrm., 2-bath, prefer view & space, have home in La Jolla if interested in trade. OS 9-3579 after 6 p.m. B

**FREE (to be given away)**

GERMAN SHEPHERD, male, 10-mo-old, has all shots & had test for worms, good w/children. OS 5-2863. D

**TWILIGHT GOLF LEAGUES SEE HEAVY SIGNUPS**

With daylight saving just around the corner, the NRC twilight golf league types are now cuing up for position at Western Avenue Country Club. "Although registration has been heavy," states Ken Clayton, Norair commissioner, "league openings still exist. Norcrafters should sign up at Personnel Activities right away. Play starts next Tuesday, May 1."

League play will be composed of 10 teams playing nine holes each match for 18 weeks. Two members constitute a team. League signups can be a single or a team entry. Teams preferred, however. The cost is \$1 a person a week.

The NRC is sponsoring 17 twilight leagues this year. There will be 240 Norcrafters vying for trophies throughout the summer.

**RENTALS OFFERED**

APT., large deluxe, 2-bdrm., built-ins, carpets & drapes, close to Boulevard shopping & Northrop, \$120 mo. 772-1992. E

DUPLEX, 1-bdrm., hardwood floors, drapes, disposal, water & trash paid, \$60 mo. OS 5-6285 after 4 p.m. E

APT., deluxe, 2-bdrm., large rooms & closets, separate dining area, carport, 4 short blocks to Northrop, \$90 mo. OS 6-1574. E

APT., 1-bdrm., unfurn., modern, w/pool 5 minutes to Northrop, \$100 mo. DA 9-1517 after 5 p.m. E

APTS., furn., spacious, modern, clean Crenshaw & Imperial area, 2-bdrm., \$130; 1-bdrm., \$105; bachelor, \$62.50 PL 6-0768. E

**FOR SALE OR TRADE**

TV, 24" Packard Bell, remote control, mahogany, \$125 or trade for piano. OR 2-2370. M

PLYMOUTH SAVOY, 1956, body in good condition, good tires, \$525 or trade for pickup truck in good condition. OS 6-3090. M

**Hearst Tour Rescheduled, New Date May 18-20**

The NRC Travel Club is holding a meeting tonight, Wednesday, April 25 at the NRC Annex. It is announced by Howard Cornelius, commissioner.

Time of the meeting is 7:30 p.m.

Important news for the Gadabouts that should be noted is that the Hearst Castle tour, originally scheduled for May 4, has been rescheduled to take place May 18. Norcrafters with reservations should check with Personnel Activities for full particulars on

the change in date and for new brochures.

Also up for discussion at tonight's meeting will be all the Club's 1962 trips. The main topic however, will be centered on the November 3 Orient tour.

Howard cautions that all Norcrafters intending to take part in the tours should not miss this important gathering.

The Seattle World's Fair reservations are moving faster than anticipated. Early action in making the deposit for this trip is an absolute must. There is limited hotel space in Seattle and only 60 Gadabouts can be accommodated.

Deposit for Seattle World's Fair is \$49. Full price is \$249. Dates of the tour are June 23 to 29.

**N-VENTURA AND NORAIR IN KEG TOURNAMENT**

An NRC invitational bowling tournament is in the offing.

Northrop-Ventura has invited Norair personnel to compete in an Easter bowling tournament on May 5 and 6 at the Acorn Bowl, it has been announced.

Location of the Acorn Bowl is 3089 Ventura Boulevard, Thousand Oaks.

All Norair personnel, their families and those bowling in the NRC leagues are eligible to participate.

The entry fee will be \$3 a person for each event and must be submitted no later than April 28.

Entry forms and rules may be obtained at Personnel Activities.

The tournament will be a handicap event which includes singles, men's, women's and mixed doubles.

**Girl Scouts in Celebration Of Their Golden Anniversary**

Last month, March, girl scouting celebrated its 50th Golden Anniversary.

The Girl Scout program, over these many years, has offered greater challenges and opportunities than any other similar organization in existence.

Girl scouting makes for a better community and a better nation. Our philosophies, attitudes and morals as taught in the program are carried on and cherished by the girls throughout their lives.

I think all women of today look back on their Girl Scout years fondly and with pride.

The NRC girl scouting family includes the Brownies who are under the direction of Joan Durmin. This group is in the ages 7 to 11 bracket and they meet at Cabrillo School every Thursday at 3:30 p.m.

Another group sponsored by the NRC is the Girl Scout Mariners headed by Ester Cook. The Mariners range from 14 to 18 years and meet on Saturday.

They are presently engaged in a canoe building program.

To round out the Girl Scout family, the NRC needs an intermediate group ages 11 to 14 and we are looking for a Norair lady



**BY DOROTHY WALLS  
NRC GIRL SCOUT  
COMMISSIONER**

who would be interested in working with and developing our intermediates.

All Norcrafters who have daughters between the ages of 7 and 18 are invited to enroll them in one of the phases of scouting. Both children and parents will find it constructive and beneficial in many ways. The outings are lots of fun not only for the girls but for the leaders as well.

Please contact Personnel Activities office, extension 2784, for complete information.



# EWI...

## Northrop-Norair Hosts Air Force First Annual Planning and Procurement Symposium



**REGISTRATION**—Air Force Education With Industry officers, in mufti, arrive at Science Center lobby for registration on first day of First Annual Industrial Planning and Procurement symposium. Visitors came from stations all over the United States.



**OUR PLEASURE**—Dick Nolan, Corporate vice-president and Norair general manager, center, and Frank Mathes, director, Customer Service section, left, extend greetings to EWI leaders Colonel Miles Palmer, director, A-F Civilian Institution program and Major Thomas S. Ford, chief, A-F Education With Industry program.



**VALUES**—Colonel Palmer with Thomas L. McCarthy, Norair manager, Administration, discuss values that accrue to both Air Force and industry in the EWI program. Selected Air Force officers spend one year on duty tour with various defense contractors where, working side-by-side with company men, they learn the complete industry picture from scientific concept through development, design, and manufacturing.



**DISCUSSION**—Norair's Grant Macdonnell, treasurer; Bob Lloyd, vice-president and assistant general manager, Operations; and Major Antonio L. Savoca, EWI. Mr. Macdonnell spoke on management science techniques used in Division's Operating Report and Budget Review. Mr. Lloyd spoke on operations management, program execution, contract administration, subcontracting.



**WELCOME**—Dr. Wm. F. Ballhaus, Corporate executive vice-president extended official welcome to EWI visitors. He also outlined factors that form our Corporate outlook. He was followed by Ward Dennis, director, Corporate Development Planning, who spoke on Corporate Organization and Activities.



**EWI**—Captain Lacy Arnold, EWI at Norair, introduced topic of Test and Development Planning. Norair was highly complimented by USAF Air University for symposium held last year. Excellence of that meeting has been credited as instrumental to the establishment of the program on an annual basis.



**TECHNICAL**—Welko Gasic, vice-president and assistant general manager, Technical, addressed EWI visitors on engineering and scientific management product areas, research and sales objectives. Complete range of Technical topics by officials of that department followed.



**DETAILS**—Coordination of the symposium was handled by team of Norair's Harry Blocher, supervisor, Training and Training Equipment; Norair Air Force EWI men, Captains Lacy Arnold and Kaye Herzer. Captains Arnold and Herzer were program co-chairmen. Master of Ceremonies was Norair's Frank Mathes.



**AIR FORCE**—Lt. Colonel Charles W. Clark, Northrop Air Force Plant representative talks on industry-military goals with Colonel Kermit D. Stevens, deputy commandant, Air Force Institute of Technology; Colonel Palmer; and Major Ford. Twenty-eight members of Northrop Corporation and Norair Division management took part in the two-day program. EWI men in background find interesting reading in current issue of Norair News.



**COFFEE BREAK**—Mr. Nolan, Colonel Stevens, Lt. Colonel L. R. Wiggins from EWI at Boeing-Seattle, and (seated) Major Ford. Mr. Nolan led Division management discussion with an address on Organization, Objectives, and Operating Philosophies. Details and subject continuity for Company speakers were handled by Mr. McCarthy.



**MANUFACTURING**—Jack Mannion, Norair manager, Manufacturing, introduced manufacturing — materiel management topics. He spoke on Management by Objectives and Self-control.



**LFC**—Milt Kuska, deputy assistant general manager for Technical, outlined to the audience the history of LFC and applications of Norair technological research in this breakthrough.





## LIGHTWEIGHT FIGHTER - - - HEAVYWEIGHT PUNCH



**NAME YOUR MISSION**—Recent photo of N-156 with armament array. Department of Defense will supply Norair fighter to selected nations of the free world. See story for rapid program action.

### Freedom Bond Campaign—Six Working Days to Go

Norair's Freedom Bond campaign which started May 7 has six more working days to go, it is announced by Charles Boyle, general supervisor, Personnel Activities and Corporate Committee bond chairman.

Organization clerks are in the process of contacting all Norcrafters with payroll deduction signup forms. Those who are already in a bond purchasing program will have an opportunity to increase their deduction and those who are not purchasing bonds will be able to start.

Feature of the bond drive not announced in the last issue of the Norair News is that there will

be a \$500 Freedom Bond given to some lucky bond-selling clerk. All clerks throughout the Corporation will have a chance.

At the conclusion of the drive, Corporation President Thomas V. Jones will officiate at the drawing.

Only bond-selling clerks will be eligible, states Mr. Boyle.

When asked what percentage of Norcrafters taking part in bond deduction would be considered a good showing, Mr. Boyle stated, "The Government is our best customer. To show our faith in America, we need 90 per cent. Anything above that we can be proud of."

### NEWS BRIEFS

**COMPUTER PROGRAMMING**—Employment inquiries are invited from technically oriented personnel interested in specializing in the data processing field, according to Ed Piper, chief, of the Analysis and Programming group of Norair's Information Processing section. Even though you have not had computer experience, if you think precisely and have suitable mathematical training and would be interested in learning the new art of computer programming, please ask your supervisor for approval to contact Roy Pool at extension 1893. Mr. Pool will arrange for an interview and an aptitude test by the personnel of the Information Processing Center. If the results of the test and interview indicate you have good potential as a computing and data processing programmer, a transfer will be arranged and you will be given on-the-job formal training in programming, coding, charting and analysis of Norair's information processing problems. As you learn, you will be given actual practical experience in this new and growing field.

## NORAIR IN HIGH GEAR ON FIGHTER PROGRAM

N-156 TO SELECTED NATIONS IN MAP PROGRAM

News that the Department of Defense intends to procure the Northrop N-156 fighter resulted in high gear action at Norair.

The airplane will be supplied to selected nations under the Military Assistance Program.

Norair Vice-president and Assistant General Manager Bob Lloyd and Project Manager W. E. "Woody" Woolwine, left immediately for a quick two-day trip to Washington to confer with Air Force officials.

In commenting on the program, Northrop Corporation President Thomas V. Jones stated, "The announcement that the Department of Defense intends to procure the N-156 for the Military Assistance Program is a move of high significance to the United States and the free

world.

"It is a job for which Norair is especially well qualified.

"The N-156 decision is a credit to the Division and to Northrop. I know that Norair will respond with total effort to justify this confidence placed in us."

Since notification of the selection of the N-156, Dick Nolan, Corporate vice-president and Norair general manager, with Assistant General Managers, Bob Lloyd, Operations; and Welko Gasich, Technical, have conducted a nonstop series of implementation actions in order that configuration tests and initial production phases of the airplane proceed immediately.

Important events that indicate project progress:

Category I flight test modifications on prototype airplane 6001 are being processed. A major part of the initial envelope requirement has, however, already been accomplished.

Tooling plans, advance release of detail parts, wind tunnel work on new armament configurations are under way.

The first Air Force team was due at the plant this week to review project plans.

Integration teams from all departments; Manufacturing, Contracts and Service, Administration, and Finance are now on station in the Engineering Science Center in support of Technical organizations.

The newspapers of the nation gave the N-156 wide publicity following the Department of Defense announcement. Sunday night, highly pleased Norcrafter television viewers saw their fighter deliver bombs on targets, take off from sod fields, and climb out of camera range in near vertical flight.

The colorful story of the N-156 began as the airplane was developed for the Department of Defense by the U.S. Air Force and Norair Division at Hawthorne. When the design was presented to the Air Force, immediate interest also developed in a high

(Continued on Page 2)

### COST-OF-LIVING INDEX RISES, UPS HOURLY PAY

The Bureau of Labor Statistics' Consumers Price index for March 15 is .5 above that of September 1961.

This rise will result in an increase of one cent an hour for all hourly rated Norcrafters.

Effective date is May 7, 1962.

### RENDEZVOUS IS IAS TOPIC FOR R. S. SWANSON

Norair Consultant Robert S. Swanson participated in the recent IAS meeting on manned space flight held in St. Louis, Missouri.

Mr. Swanson took part in the discussions on environmental control systems held at McDonnell laboratories. His topic was "Rendezvous Guidance Technology".



# Norair Officials on the N-156

The N-156 fighter program is being steadily dovetailed into the plant workflow. A series of nonstop meetings has already served to delegate responsibilities and get key operations under way. Wind tunnel testing on new armament configurations began last week . . . For statements on what the program means to the Division and to Norcrafters, the News interviewed our top officials.

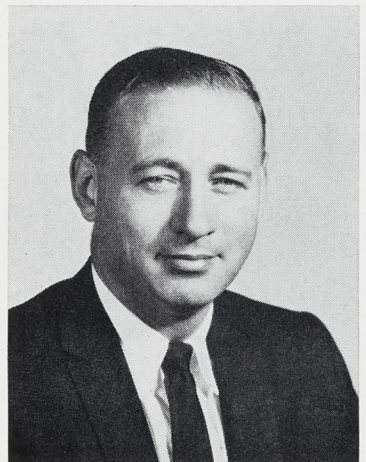
**Dick Nolan, Corporate vice-president, Norair general manager,** "Success of the N-156 confirms Corporate policy, developed by our president, Tom



Jones, of using advanced technology to provide efficient solutions to customer requirements. The selection of our fighter is a fine commendation of Norair's translation of this policy into the design and manufacturing concepts which produced this high performance aircraft . . . These aircraft to be built at Hawthorne, will be supplied to selected countries under the Military Assistance Program and will replace fighters currently in use. The exact quantities and schedules have not been finalized, but I am certain that the total requirements of this program will be very significant to Division activity in the years ahead . . . This program will challenge our ingenuity throughout each department in the Division. I am confident that the teamwork which produced and placed in production the Air Force's first supersonic trainer and completed its Category III flight testing, accident free, ahead of schedule, will meet this new challenge and continue our tradition of high quality, on schedule, production."

★ ★ ★

**Bob Gates, Norair Marketing manager,** "Norair's performance on the trainer version, the T-38 Talon, will help us to build a customer-pleasing product in the N-156 . . . We can proudly say that all presentations were based 100 per cent on data backed by flying airplanes that demon-



strated a high degree of suitability for the difficult missions required . . . Division teams of skilled specialists are even now ready to support this new Air Force program wherever in the world there is a need—and on a moment's notice."

**Bob Lloyd, Norair vice-president and assistant general manager, Operations,** "The N-156 is an airplane that all Norcrafters will be proud of. Operations looks on this assignment as a fine opportunity to display team effectiveness in producing a product that will meet the critical specifications of the mission requirement . . . We must manufacture an honest, trouble-free,



long-life weapon that will do the job that our allies ask of it whatever the operating conditions. The N-156 cannot be a temperamental airplane. It must be a 'go' system . . . All elements of Operations are now in support of the program. Manufacturing and Materiel are strongly in support of Technical's initial moves and they are preparing for their own functions as soon as releases are made."

★ ★ ★

**W. E. Woolwine, Norair manager, N-156 and T-38 Program department,** "A major share of detail parts releases on the N-156 will be out in 30 days. Releases will be complete within six months. Wind tunnel tests on new configurations began last week. Prototype air-



plane 6001 which has already accomplished a large amount of the "envelope" Category I requirement will continue its flight work at Edwards in the near future. The third prototype airplane 6003 is scheduled for first flight in eight and a half months. This airplane will be fully instrumented for airloads, flutter, stability, control, and structural integrity. It will also participate in Category I. First production airplane is scheduled for flight in 12 and a half months. This airplane will complete Category I work—approximately six weeks. Our acceptance target for first production airplane is shortly thereafter."

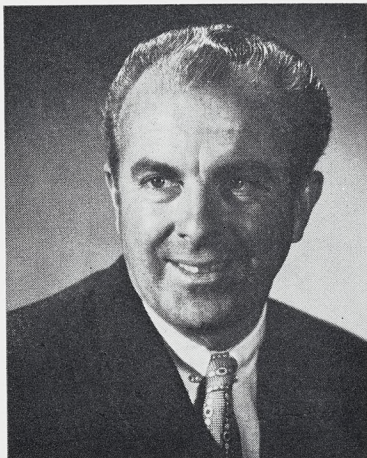
**Welko Gasich, Norair vice-president and assistant general manager, Technical,** "Department of Defense decision to put the N-156 in production reflects a change in policy of the United States with regard to military assistance to the smaller countries of the free world. It means that we will supply them with an airplane that not only fits their military requirements but falls within their manpower and technological capabilities as well . . . I predict that the N-156 and the T-38 are the beginning of a family of lightweight aircraft



that are ideally suited to the role of training, limited war and close support, where flexibility of operation and ease of maintenance are of paramount importance."

★ ★ ★

**Jack Mannion, Norair manager, Manufacturing,** "The N-156 program is an important and much needed factor in stabiliz-



ing Norair's work force. Our first move to meet the schedule 'in advance' will be immediate prerelease of N-156 and T-38 detail orders so that the factory fab load can be adjusted to meet any contingencies. Manufacturing support teams have already been assigned to Technical—Tool Engineering, Materiel, factory specialists, Manufacturing Control, Manufacturing Program Planning are now on station in the Science Center project areas."

## MANAGEMENT

**A DEFINITION**—Management science offers a scientific method of providing executives with an analytical and objective quantitative basis for decisions.

Management science research is applied research, and the output of such a research project must be of direct aid or use to the business executive.

*Dr. R. S. Weinberg, Manager, Market Research, IBM*

## Ten-Year Pins at NSL



**NSL PRESENTS**—First service pin presentation at Northrop Space Laboratories took place last week as four 10-year men were honored. From left, seated, are pin recipients Eugene Smith, Systems Development section; Ken Smith, Space Defense Systems Technology and Analytical section; Bill Hilker, Systems Development section; and officiating Dr. Ludwig Roth, vice-president and manager, NSL Systems Engineering department. Standing, Dr. K. Satyendra, director, Space Defense Systems Technology and Analytical section; Dr. Erwin Naumann, director, Systems Development section; and pin recipient T. M. McCoy of Systems Development.

## N-156 in High Gear

(Continued from Page 1)

performance trainer version that became the T-38.

The N-156 was flight tested at Edwards Air Force Base. Its design applies the most advanced technology to provide flexible, versatile air power for any potential combat environment.

An up-front fighter, the twin-jet N-156 is intended for close support of troops, interception of enemy aircraft, swift attacks on communications and supply lines and armed reconnaissance missions over enemy territory.

The N-156 can fly at more than Mach 1.4 in level flight. It can climb at 34,000 feet per minute at sea level and has a service ceiling of 55,000 feet.

The twin-engine N-156 can take off, climb to altitude, complete a mission and return to base safely on only one engine.

The N-156 can accommodate a variety of fire control systems

in its 40 cubic feet of space for electronics equipment.

Its two General Electric J-85-5 engines deliver more than 4000 pounds of thrust each—more power per pound of weight than any other jet engine in production today. An engine can be changed by three men in only 20 minutes, and each is so light it can be changed by hand if necessary.

Noted for its ability to take off and land in short distances, the N-156 can take off in approximately 1700 feet, and, using a drag parachute, can land in approximately 1800 feet. In May 1961, the N-156 became the first supersonic jet to take off and land on a sod field. Later it operated for days from a grass covered strip, taking off in less than 2500 feet with full internal fuel load. Its leading edge flaps and drag parachute brought its landing rolls on grass to a full stop in as little as 1300 feet.

## Defense Marketers Write



**MAN IN THE SPOTLIGHT**—Lou Drazin, Special Projects, Marketing, surveys his mail as result of a magazine article he wrote suggesting an association of defense marketers. Letters in favor of poured in from every section of the United States. Idea was so popular that first organization meeting was called last week. Such an association would be of great benefit in helping to standardize affairs between government and contractors. The Drazins were also widely publicized a short time ago when it became known that wife Gina was "voice" in Nortronics NORVIPS system in the B-58s.





**RIDES WANTED**

**8 a.m. — 4:45 p.m.**

CALLE MAYOR & PACIFIC COAST HWY, Torrance. B. B. Quinlan, ext. 1893, FR 5-3149.

PARAMOUNT & DEL AMO, Lakewood. L. R. Gutstadt, ext. 2561, 421-2935.

**3:45 p.m. — 12:15 a.m.**

ARTESIA & PIONEER, Artesia. Quinton Louis Sipes, Tie Line 481, ext. 38.

**RIDES OFFERED**

**7:30 a.m. — 4:15 p.m.**

WESTERN & 9TH ST., San Pedro. Via Western, Sepulveda, Hawthorne, Rosecrans & Aviation. F. G. Nicolay, ext. 3-214, TE 1-5158.

**8 a.m. — 4:45 p.m.**

PARAMOUNT & DEL AMO, Lakewood. L. R. Gutstadt, ext. 2561, 421-2935.

**BBSF Classified Ads**

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

**FOR SALE**

HOUSE, 2-bdrm., immaculate, drapes, carpeting, block wall, in Manhattan Beach, terms, \$17,450. FR 9-4740.

CHEVROLET, 1949, 4-dr., r/h, good condition, \$95. OR 0-2360 after 5 p.m.

OUTBD. CABIN CRUISER, 16' Curt Craft, w/33 hp Scott, custom hvy-duty trailer w/16" wheels, fiberglass hull, new paint, ready for water skiing or fishing. 2 lifejackets, paddle, anchor included. \$795. DA 6-6539.

BOAT, 16' Morgancraft, 40 hp Scott elec. & trailer, \$800. PL 1-7753.

TAPE RECORDER, Webcor Minicorder, \$100; GI frequency meter, BC-228, w/power supply, \$70. FR 1-2531 after 5:30 p.m.

DINING ROOM SET, hard rock maple, & buffet, PL 4-4908.

FENCE, heavy galvanized chain link. 50 feet, 5' high including top rail, post & couplings, OS 6-0041.

**AD, RIDE FORMS**

Going My Way and BBSF forms are available from Company stockrooms.

Going My Way is Form No. 59-228. BBSF is Form No. 59-308.

AIR COOLER, Wright, for car, 3-sp. \$20; rug, 11x15, blue frieze & pad, wool, \$20. HA 1-2265.

RADIO CRAFTSMEN C-800, AM/FM tuner/preamp, Webcor record changer w/dia/saph GE cartridges, EV Peerage tilt-front mahogany cabinet, cost \$350, cab. alone cost \$100., \$125. OR 4-0762.

SABRE SAW, Craftsman 100, hvy-duty, never used, extra blades w/attachments & carrying case, \$35. FR 1-6894.

COUCH & matching chair, black w/gold, \$40; 8mm movie editor, Mansfield, \$15; Zeolite, high capacity for water softener, \$15; record player, 3-sp. \$12.50. PL 6-0768.

BELT VIBRATOR, hvy. duty, professional-type, 1 hp motor, new condition, \$125; camera, 35mm w/f1.5 lens & access., \$115; projection screen, 52"x52" glass beaded, \$20; fan, floor-type, 20" GE, 3-sp. \$24. GA 4-0384.

HOUSE, 4-bdrm., 2186 sq. ft., 2-car garage, family room, 2 1/2 baths, draperies, wool carpeting, complete built-ins, harbor view. \$43,950. TE 1-1919.

STAUFFER TABLE, complete, \$125. OS 6-2162.

**DON KOHLER ON "LOAN" TO CANCER CRUSADE**

Norcraft Don Kohler was assigned to work as a loaned executive for the American Cancer Society's educational and fund raising Crusade.

A resident of Gardena, Mr. Kohler is administrative assistant for Industrial Relations at Norair, Hawthorne. His assignment

**FOR SALE**

EXPRESS CRUISER, 22'x8' beam, planked hull, Grey marine inboard, C.G. approved. \$2250. OS 9-4108 after 5 p.m.

TRUNK, \$10. 831-6973.

AUSTIN-HEALEY, 1957, heater, o/drive, wire wheels, \$1350. DA 3-4936.

GLASSED BOAT, 15' plywood, trailer, & 30 hp Johnson, like new, \$500. OS 6-4820.

BASEBALL SHOES, Little League, size 4 1/2, new \$4; Daisy pump bb guns, 2 model 25. \$4.50 ea; deep sea glass rod, 250-yd, Penn reel, new mono line, \$8 PL 5-4497.

STENOTYPE, like new, \$65. PL 6-8891.

STOVE, O&K, gas, white, apt or small kitchen size, 36", 4-burner, oven & broiler. \$50. 378-5348.

BICYCLE, Schwinn 26", boy's, \$25; Whirlpool washer, Imperial model, automatic, \$65; sewing machine, blonde cabinet. \$75. UN 4-7673.

CHEVROLET, 1954, Bel-Air, 2-dr sedan. Powerglide, good condition, \$375. OS 5-4708 after 3:45 p.m.

BEDROOM SUITE, 5-pc, blonde, modern, \$50. OS 9-3868.

TELEVISION SET, 21" RCA, new picture tube. \$75. OR 7-8775.

5 lots, Inglewood Park Cemetery, El Portal section, double interment privilege, one or all, cash or terms, \$400 ea. plus transfer fees. DA 9-9464.

COOLER, Coleman, w/Mag-Lock latch, Mod. 5215, still in carton, \$15. OR 0-1890.

POWER MOWER, reel-type, \$35. OR 2-2370.

WILLYS JEEP, 1954 station wagon, 4-wheel drive V-8 eng., heater, \$495. FR 1-1787.

DINING TABLE, contemporary, w/4 upholstered chairs & matching buffet, birch, \$125; coffee table, blonde, modern, w/2 matching end tables, cost \$300; \$65. DI 2-4588 after 6 p.m.

R-1 LOT, price & terms to satisfy, in Palmdale, \$25 dn & \$25 mo., total price \$1950. FR 1-1308.

REFRIGERATOR, Servel, \$35; gas stove, \$15; Hollywood bed, \$40. HE 6-3730.

TR-3 SPORTS CAR, 1956, \$1000. DA 6-4195.

DART-KART, Clinton 2 1/2 hp eng., never been on a track. cost \$225; \$175. OS 6-7820 after 4:15 p.m.

AUTOMATIC WASHER, Norge, 2-yr-old, cost \$300; \$85. FR 1-5006.

PIANO, w/bench, Wurliitzer Spinnet, full size, mahogany, 10-yr-old, \$350. DA 9-1215.

HILLMAN MINX, 1960, 4-dr. sedan, automatic trans., r/h, \$200 equity & pick up payments of \$59.75 a mo. NE 2-2642.

HOUSE TRAILER, 1953 Crown, w/awning, \$400; outbd. eng. 7 1/2 hp Elgin, \$65. OR 1-1660.

GUITAR, Gibson, elec., Model ES-175, mahogany sunburst finish, case & music stand, \$85. PL 5-3456.

MGA 1600 SPORT ROADSTER, 1960, convertible, blk w/beige leatherette int. r/h, w/w, 23,000 original miles, \$1595. OS 6-8768.

BICYCLE, girl's, 26" Schwinn, 3-sp., dual hand brakes, good tires, lots of chrome. \$35. DA 4-1644.

KITTENS, Siamese, blues & seals, ped. papers. \$25. Box 1001.

DODGE, station wagon, 1957, r/h, automatic trans., recently painted, \$795. OR 1-9211.

1-WHEEL TRAILER, Sears, extras, 1962 license ad \$35. FR 4-1889.

DRAFTING MACHINE & scales, Bruning Model #2700 used very little, cost \$150; \$100. GR 4-6437 after 6:30 p.m.

BOX SPRINGS & MATTRESS, Enalander, used a short time. \$20. 378-5472.

V/W DELUX SEDAN, 1957, radio, new battery, clutch & pressure plate, needs recap of tires. \$725. DA 9-4447.

VACATION TRAILER, 18', sleeps 6, elec. brakes, refrigerator, 1962 license, \$550; Chevrolet coupe, 1955 Bel-Air, 2-dr 6-cyl., stick, \$550; boat, Fiberglass, 14' w/trailer, 30 hp Evinrude, controls. 5 gal. tank, life jackets, \$500. TE 5-3851.

**WANTED TO BUY**

CHEVROLET or Ford 1950 or '51, w/stick shift. Must be in good condition AT 2-8060.

1 SET of used encyclopedias. FR 5-8804.

PUP, toy terrier or similar small dog, reasonably priced. 672-6143.

**FREE (to be given away)**

PUPS, mixed breed, 6-wks-old. OS 9-6695.

STOVE, 4-burner gas, w/oven & broiler. 36" wide, white porcelain. 8-yr-old, FR 1-3988.

**RENTALS OFFERED**

APT., 2-bdrm., unfurn., stove & refrigerator available, within walking distance of Northrop, no children, \$90 mo. OS 6-8283 after 5 p.m.

with American Cancer Society involves work with the Commerce and Industry Division.

**Forty-Niners Saw Nothing Like This**



**BIG SUCCESS**—"Springtime in Gems" welcomed over 2700 people at the recent showing in the Product Display Building, it is reported by NRC Gem and Mineral Club Commissioner Dan Kozlow and show manager Frank Matthews. It was the third annual mineral showing for the club. Photo shows small portion of intensely interested crowd that came to view the exhibits. The Gem and Mineral Club has 300 active members. "We have room for all good Norcrafters," states Dan. "The best way to get started is to attend meetings." Meeting is tonight, 7:30 p.m.

**SEATTLE TOUR COMING UP**

Deposits are now in order to secure reservations for the upcoming NRC Travel Club Seattle World's Fair tour, it is announced by Howard Cornelius, Travel Club commissioner.

Total price for the tour is

\$249. For children, ages 2 to 11, price is \$135.

Transportation will be by United Airlines jet.

Dates of the tour are June 23 to 29.

Upon arrival at Seattle, Nor-

crafters will be ensconced in the just completed, ultra-modern, lakeside, Hotel Shangri-La.

There will be side trips to Victoria and Vancouver with optional side trips to Mount Rainier, Canadian Rockies, and even to Alaska, the latter at extra cost naturally.

Some of the inclusive features of the tour are jet flight to and from Seattle; Canadian Pacific Steamships for the Victoria and Vancouver trip.

For the hotels, a double occupancy of twin rooms with private bath.

For the Exposition, three round trip Monorail rides; three general admissions for the grounds; four rides on the Gayway; admission to the Fine Arts Exhibition; admission to the Performing Arts Exhibition; official guide book and lapel pin.

**"LOST RALLY" PLANNED BY SPORTS CARS**

That itchy throttle foot will soon get satisfaction, the News is informed by Paul Ankeny, NRC Sports Car Club commissioner.

This Saturday, May 12, "Rally of the Lost" will be staged. The Club will leave Parking Lot F on the east side of Plant Three at 6:30 p.m. The exercise will last until 8:30. A party will follow. Entry fee is \$1.50 a car.

The Sports Car Club's regular general meeting is scheduled for Monday, May 14 at the NRC Annex. Special guest speakers will be Bill Lanshaw and Dave Stearns of the A-C Spark Plug Division, General Motors Corporation.

**Northrop-Norair News**

VOL. 20 NO. 10

1001 E. Broadway, Hawthorne, Calif. A NORTHROP CORPORATION PUBLICATION

Published every other Wednesday NORAIR DIVISION

CHARLES BRADFORD, Editor

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**NRC Tennis Club Puts on a Very Exciting Tennis Tourney Series**

Slam bangin'est tennis tournament series ever is roaring along, states John Potts, NRC tennis commissioner. Forty-eight men and 14 women are taking part in the spirited action that began in February at the El Camino Junior College courts.

A good-sized crowd of fans turned out for the professional-type tennis in the recent Lurie-Reese match.

States John, "Thrills from the action, chills from the weather."

**NRC DEEP SEA FISHERMEN OFF TO SAN DIEGO**

The NRC Sea Anglers, Frank Nakatsukasa, acting commissioner, has a charter boat out of San Diego next Saturday, May 12, it is announced.

The boat is the Betty Lou, \$12 a person, and will leave Fisherman's Landing at 2:30 a.m. Capacity is 41 persons.

A charter bus will be provided from Norair to leave May 11, Friday night, 9 p.m. Fare is \$3.75 round trip.

There will be sleeping accommodations on the Betty Lou.

Reservations are limited, says Frank, and cautions that Norcrafters who plan to go should deposit their money now.

Another Sea Angler activity will be an entertainment program slated for May 15 at 7:30 p.m. at the NRC Clubhouse Annex.

**PERSONALS**

GRATEFULLY acknowledging & thanking you for your kind expressions of sympathy, MARGARET HOFFMAN.

FRENCH & invisible reweaving done reasonable. PL 6-9775.

but no spills have marked the tournaments to date."

Winners and runners-up to now have been presented with trophies are:

Men's open singles — winner, Bill Lurie. Runner-up, Bob Reese, Ventura Division.

Women's open singles — winner, Joyce Duffy. Runner-up, Maxine Lewis.

Men's C singles—Bill Lewis. Runner-up, Frank Andrecheck.

Men's D singles—George Kall. Runner-up, Joe Kline.

Men's combined C & D singles —Earle Sowle and John Ashley. Runners-up, Dick Bartholomew, Norair and George Brundage, Ventura.

Open mixed doubles—finalists were Bill Lurie and Maxine Lewis versus George Kall and Susan Burris.

**GOLFERS WILL TOURNEY AT RANCHO VERDE**

The next golf tourney will be held at El Rancho Verde on May 19, it is announced by Ken Clayton, NRC golf commissioner. Starting time is 10 a.m.

Green fees are \$3.50 plus 50 cents prize fund for a total of \$4.

There is a limit of 100 golfers. Meanwhile, winners of the San Clemente tournament are in.

Leonard Burton took low gross with a 75.

Low net was won by Bill McCluskey, 95-30-65.

First flight winner was Joe Haddad with a 69.

Second flight was won by Jim Quick with a 68.

Third flight by Jay Osterberg a 70.

Fourth flight, Dan Casson, 66.



## Management Club Official Family



**MANAGEMENT CLUB** — New Management Club officers have been installed for 1962-63 term. Seated, from left, Louis W. Perry, secretary; Fred Rosenthal, treasurer; Al Binsacca, president; Bill Schramm, vice-president; Ray Staley, night vice-president; John Shanelec, sergeant-at-arms. Standing, from left to right, Jack Gibilisco, finance; Herb Rich, programs; Tom Brazil, junior achievement; Dona Page, membership; Louise Hobson, personnel; Ed Laski, educational tours; Bill Jones, forums; Ed McGrath, facilities; and Harry Blocher, publicity. Not in photo, Fred Erb, forms.

## Material Sciences Conducts Sessions in Space Problems

Will aluminum be obsolete for tomorrow's supersonic designs? Is beryllium the best structural material for spacecraft? What are the effects of aerospace environments and radiation on structural materials? How can we best protect men in space from meteoroid hazards?

These are typical of the questions being answered in the Company-sponsored course, Mutual Relationships — Design Requirements and Materials Selection. Started in February, this popular after-working-hours class is being attended by 35 key Norair and Northrop Space Laboratories specialists selected from more than 115 applicants.

Coordination details were handled by Management Development and Industrial Training group.

Recognizing the need for additional knowledge in these areas, the Material Sciences and Value

Engineering group, J. A. Van Hamersveld, chief, began planning the course last summer. William R. Micks, head of Structures and Materials, Rand Corporation, and lecturer in engineering at UCLA, was engaged to present basic design considerations. Other lecturers were drawn from Norair and Northrop Space Laboratories scientists and specialists.

Professor Micks' lectures have been demonstrating effective techniques to evaluate the design-materials interface by establishment of design indices, efficiency and performance parameters, and similarity principles. Northrop experts are presenting detailed information on space and supersonic vehicle environments, the effects of these environments on materials, approaches to the solution of problems posed by these effects, and the direction of needed future effort.

**BUY  
U.S.  
SAVINGS  
BONDS**

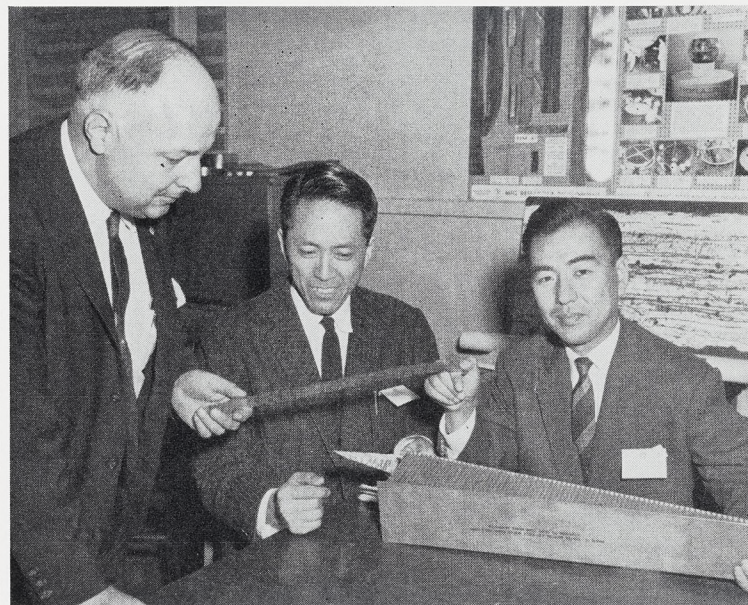


**DESIGN-MATERIALS LECTURE TEAM**—Left to right, Engineering Specialists H. E. Hotz, Propulsion and Power branch and Arnold Schlosinger, Thermal and Atmosphere Control branch, NSL; Professor W. R. Micks, head, Structures and Materials, RAND Corporation; R. E. Fortney, supervisor, Nuclear Sciences laboratory, NSL; W. H. Roberts, supervisor, Dynamics and Loads branch, Norair; Barney Gaiennie, chief, Manufacturing R&D, Norair; Doctors R. M. Heitz, senior research chemist and R. D. Johnson, supervisor, Space Materials laboratory, NSL; Dr. R. L. Jones, supervisor, Material Sciences laboratory, Norair. Not in photo, S. A. Powers, senior engineer, Gas Dynamics branch, Norair.



**SAFETY CONFERENCE**—Don Claasen, senior lead engineer, Electrical and Instruments, and Bob Bullington, general supervisor, Quality Analysis, left and right respectively, take time out for photograph with Vernon Grant, Aero Research Development and design engineer, Office of Deputy Inspector General for Safety, Norton AFB. Occasion was 49th Air Force-Industry safety conference. Sponsor was Deputy Inspector General, Headquarters USAF. Conference was held in Palm Springs. Others from Norair attending included Frank Lyons, chief, Electronics Systems group; Flight Safety Norcrafters Don Theleman, staff engineer; Warren Whipple, engineer; and Robert Kaminski, Staff and resident rep at Norton AFB. Discussion emphasis was on past performance, future trends, and current needs in electronically controlled systems.

## Honeycomb and Japan



**FROM JAPAN**—Norair's Barney Gaiennie, chief, Manufacturing Research and Development, explains our honeycomb methods to two visitors from the great Mitsubishi Company of Japan. Center is H. Morikawa, Electronics Works, Mitsubishi Electric Manufacturing Company, Ltd., Amagasaki City, Japan and Akira Takei, representative, Mitsubishi International Corporation, Los Angeles branch. The visitors were surveying capability of U.S. firms as preliminary to possible contract for manufacture of honeycomb panels for space communication antenna.

## PACE Section Realigned, Outside Sales and Internal

Activities and operations of the PACE Services section have been realigned, it has been announced by Jack Mannion, manager, Manufacturing department.

The change is part of Norair's "New Frontiers of Management" program which is dedicated to nothing less than a parallel advancement of the management sciences with the technologies.

PACE Sales, under the direction of D. N. Petersen, has been made a separate entity and reports directly to Mr. Mannion and will continue to merchandise the PACE concept to industry throughout the United States and abroad.

PACE Sales operations will also continue to serve the Northrop-Norair military and govern-

ment interests through the media of PACE briefings and presentations.

Operation of the Norair internal PACE program is under the direction of G. A. Schnug, assistant to the manager, Manufacturing department. This portion of the program will continue to provide Norair management with comprehensive and effective management tools, engage in research, and conduct pilot programs to keep PACE methods in the forefront of modern industry practices.

Additionally, this portion of the PACE program will provide PACE Sales with installation personnel, on an established rotation basis, for the purpose of servicing client companies.





## Norair Complimented by A-F on EWI Presentation

Air Force Institute of Technology  
Air University  
United States Air Force  
Wright-Patterson Air Force Base, Ohio

Mr. Thomas V. Jones  
President  
Northrop Corporation

Dear Mr. Jones:

Colonel Stevens, Colonel Palmer and members of his staff have returned from the Norair Division where your company presented the First Annual Industrial Planning and Procurement Symposium for Air Force Education-with-Industry officers. Colonel Stevens stated that all present were very much impressed with the quality of the program from the standpoint of speakers selected, content of each presentation, and logical organization of the agenda.

The Air Force Institute of Technology has been aware for some time that Mr. Nolan and his staff conducts an outstanding program for the Air Force. The excellent presentations offered at the Symposium confirms the quality of instruction received by our officers while studying with your company. The group was particularly impressed with the positive management philosophy that all top level management exhibited in their presentations.

I am very grateful for your interest in assisting the Air Force with the Education-with-Industry program. This Symposium will be remembered as high point in the program of the officers that attended.

CECIL E. COMBS  
Major General, USAF  
Commandant

## Arnold Air Society



**SECRETARY ZUCKERT**—Air Force Secretary Eugene M. Zuckert and Northrop President Thomas V. Jones with special Arnold Air Society award given to Mr. Jones in appreciation for his services on behalf of the society. During the AAS Awards banquet held at the Statler-Hilton, Northrop-Ventura Division was given Citation of Honor and congratulated by Secretary Zuckert for reliability of landing systems for NASA's Project Mercury. Northrop-Ventura now has contract to provide the landing system for the new Apollo spacecraft.

## NEWS BRIEFS

**SCIENTIFIC ADVISORY BOARD**—Norair Division's Welko Gasich, vice-president and assistant general manager, Technical, has been appointed to the USAF Chief of Staff's Scientific Advisory Board, it has been announced by Dr. H. Guyford Stever, MIT chairman. Mr. Gasich will serve as consultant to the panel on aerospace vehicles. The Scientific Board was formed 18 years ago by General H. H. Arnold, then commanding general, United States Air Force. Its continuous objective is to provide a close link between the Air Force and the civilian scientific community. The Board presents its recommendations directly to the Chief of Staff. Its activities normally include all scientific matters relating to fulfilling the Air Force mission, and consideration of management and administrative problems that influence the effectiveness with

(Continued on Page 4)



**PEBBLE HEATER PLACED**—Norair's new hypersonic wind tunnel facility nears completion. Here giant cranes gently lower 90-ton pebble bed heater into place. Device will heat air as it passes over bed of alumina pebbles to 2800°F, this to prevent liquefaction of air as it accelerates up to Mach 14 plus. Vacuum sphere has undergone tests to 200,000-foot altitude. Calibration runs on hypersonic circuit at ten times speed of sound will be made this week.

## Omley Made Director of Production

O. P. Omley, formerly director, LFC Aircraft Construction section, has been appointed



O. P. OMLEY

director of Production Operations, it is announced by Jack Mannion, manager, Manufactur-

(Continued on Page 2)

## Development Engineering, New A-F Office at Northrop

Lt. Colonel A. N. Allred has been named Air Force Plant representative officer for Development Engineering, it has been announced by Lt. Colonel Charles Clark, Northrop AFPR.

Colonel Allred was formerly chief, Satellite Test Planning Office, Air Force Space Systems Division, a duty which he held for four years. He is a graduate of the Air Force Institute of Technology and the Air Force Experimental Test Pilot School.

The newly created Development Engineering Division is in support of the System Pro-



COLONEL ALLRED

gram Office and other Air Force elements and will provide the contractor with technical and liaison assistance wherever possible. Objective is to provide a

(Continued on Page 2)

### REFERRAL AWARDS

See Page 2

He served as an experimental test pilot in the Flight Test Division, Wright-Patterson Air Force Base.

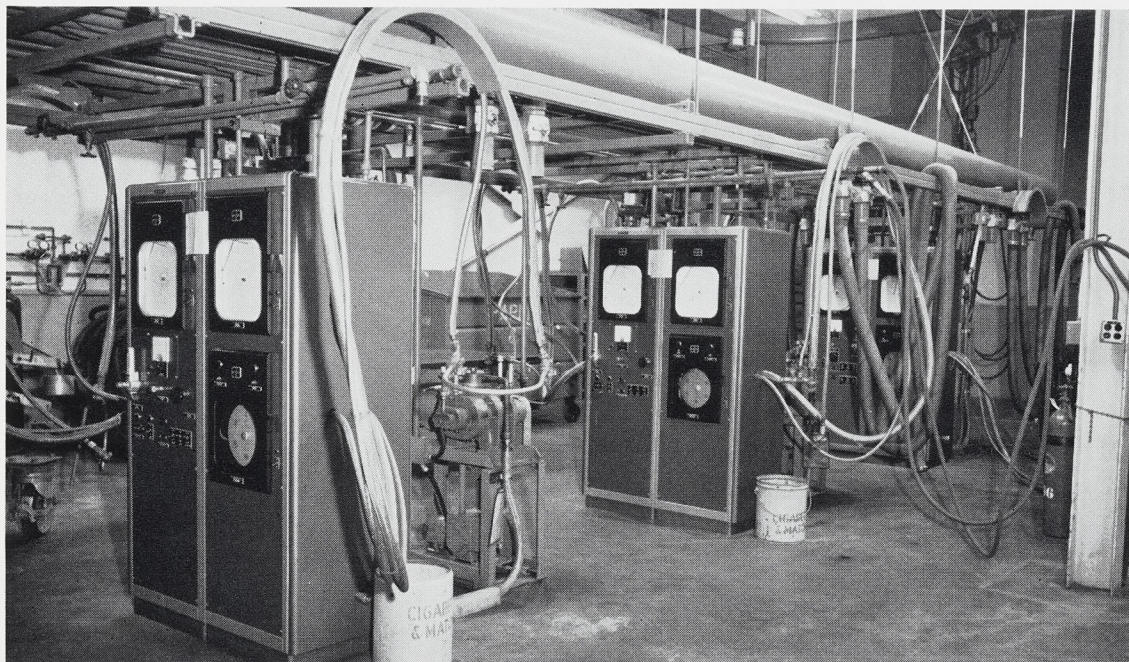
Colonel and Mrs. Allred reside in Torrance, California. His hometown is Mt. Airy, North Carolina.



## Good Housekeeping Winners



**GOOD HOUSEKEEPING**—Named tops in Manufacturing for good housekeeping for month of January was 5508, Process, Paint, and Upholstery. Ed Nolan is general foreman, days; Matt Kenny, assistant general foreman, nights. Shop looks "neat as a pin", even to young lady's purse location.



**FEBRUARY WINNER**—The honeycomb braze shop took good housekeeping honors for February. Loyal Massey is general foreman, days. Mr. Kenny also is general foreman, nights, over this area. Braze shop is not only noted for cleanliness, its brazing rep has been setting the pace in the new technologies.



**MARCH WINNER**—Good housekeeping award for March went to 5517, Hydraulics and Cables. General Foreman is longtime Norcrafter John Dew. Winning organizations emphasized orderliness as well as cleanliness, a place for everything and everything in its place. Second quarter winners will be featured in July.

## Col. Allred

(Continued from Page 1)

means by which better understanding among all elements is obtained.

Generalized functions are in the following areas.

**Engineering Management**—Evaluate and monitor—management tools, budget control system, R&D planning and use of engineering talent, the development and establishment of an adequate reliability program, en-

gineering data control system, technical manuals and procedures, engineering change proposals and configuration control.

**Engineering Services**—Evaluate, study and make recommendations on—engineering studies and proposals, development schedules, test efforts and results, unsatisfactory conditions or equipment, work statements and cost proposals, and other engineering services as capable.

**Test Participation**—Assist, review and approve where appropriate—test directives and plans,

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test data, test evaluation methods, test procedure changes, and provide guidance as required.

## Most Honored U.S. Soldier Joins Northrop Corporation

Raymond Harvey, one of the most honored and decorated men to come out of World War II and the Korean conflict has been appointed assistant to the vice-president, Customer Relations, it has been announced by Dr. William F. Ballhaus, Northrop Cor-

poration executive vice-president.

Mr. Harvey, who retired as a lieutenant colonel in the Army and who holds the Congressional Medal of Honor, has had wide experience in the field of industry-military relations. He has just successfully established and operated the first U.S. Army-industry liaison office. Procedures and methods developed by him have



COLONEL HARVEY

set the pattern for operation of a network of 16 such offices now furthering Army-industry programs throughout the United States.

Colonel Harvey, a company commander, led his organization into Utah Beach eight days after D-Day. Ten months and five campaigns later he was in Czechoslovakia celebrating the end of the war and preparing to return home.

When the Korean conflict came, he was again company commander in the 7th Division and led his unit through the bitter months of fighting to the Yalu River. His company was the first American unit to reach the border between North Korea and Red China.

He was severely wounded on the return drive up the peninsula on an uncharted mountain known as Tami-Dong near the 38th Parallel. Evacuated to Japan in March 1951, he remained in the hospital until July 1951 and then returned to the United States.

He has over 35 decorations including honors from France and Korea. Heading the list is the Congressional Medal of Honor.

Colonel Harvey worked his way up through the Army ranks. He was serving as a first sergeant in 1942 when he was selected to attend Officers Candidate School at Fort Benning.

## REFERRAL AWARD LIST

An award of \$100 will be paid for the referral of applicants in the following classifications:

Engineer  
Engineering Project Administrator  
Engineering Project Assistant  
Engineering Reliability Coordinator  
Research Analyst  
Engineer Senior  
Engineering Project Administrator Senior  
Engineering Reliability Coordinator Senior  
Engineering Specialist  
Research Analyst Senior  
Scientist  
Scientist Senior  
Senior Technical Specialist  
Member of Senior Technical Staff

Awards will be paid upon completion of 90 days employment. Referral award cards are available at Personnel.

## Omley

(Continued from Page 1)

ing-Materiel department.

Mr. Omley, a longtime Norcrafter was superintendent of Fabrication Operations prior to his LFC assignment.

He replaces A. C. Wallen who has moved to Northrop Space Laboratories as director of Fabrication and Assembly.

E. E. Nickles will follow Mr. Omley as director, LFC Aircraft Construction section.

## MEMORIAL DAY A HOLIDAY

All Norair Division facilities will be closed Wednesday, May 30, in observance of Memorial Day, it is announced by Dick Nolan, Corporate vice-president and Norair general manager.

Memorial Day is a Norair paid holiday. The holiday actually starts with the morning shift scheduled to report after 12 midnight, May 29 and ends 12 midnight, May 30.

To be eligible for holiday pay, Norcrafters must be on the active payroll and at work May 29 and return to work May 31.

Pay for the day is straight time.

Hourly Norcrafters on vacation will receive an extra day's pay to compensate.

## SYMPHONAIRES NEED VOICES

New voices are needed. Singing voices that is.

The NRC Symphonaires, noted throughout the Southland for their fine harmony, are looking for sopranos, altos, tenors, basses.

The chorus meets every Thursday at 7:30 p.m. in the Hawthorne High School's choir room.

Special auditions for new members are held just before the regular practice sessions at 7.

## NEED HELP?

The California Department of Employment does more than pay unemployment insurance. Its major division, the California State Employment Service is primarily engaged in securing jobs for those desiring work.

As a householder you are occasionally in need of extra help. Your local California State Employment Service has an ample supply of qualified day workers, handymen, and baby sitters, available to serve you. If you need help with spring cleaning, gardening or just to do a nagging job around the house, a call to ORchard 4-2531, or to the office nearest your home, will bring quick results.





## RIDES WANTED

7:30 a.m. — 4:15 p.m.

LENNOX BLVD. &amp; HAWTHORNE BLVD., Lennox. Carol Taylor, ext. 1708, 2418, OR 2-1881. 3

WOODRUFF &amp; SOUTH, Lakewood, Glen P. Rice, ext. 2781, TO 6-3004. 3

8 a.m. — 4:45 p.m.

REDONDO BEACH BLVD. &amp; RINDGE LANE, Redondo Beach, Doris Morrison, ext. 1356, FR 2-1402. 5

MANCHESTER &amp; VERMONT, Los Angeles. D. Conchis, ext. 474, OX 4-4480. 5

## RIDES OFFERED

7:30 a.m. — 4:15 p.m.

WOODRUFF &amp; SOUTH, Lakewood, Glen P. Rice, ext. 2781, TO 6-3004. 13

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

HOUSEHOLD FURNISHINGS, stove, \$150; refrigerator, \$100; washer, wringer-type, \$35. OR 2-6715. A

MERCURY MONTEREY, 1956, black, 2-dr., h/top, p/steering, auto. trans., orig. owner, \$535. SY 6-2595. A

REFRIGERATOR, Servel, 1955 mod., 9-cu. ft., \$45. FR 1-0431. A

TRAMPOLINE, professional size, cost \$225, 3-yr-old, \$65. FR 9-1580. A

HOUSE, GI resale, Norwalk College Estates 2-yr-old, 4-bdrm., 1 1/2 baths, 18x24 living room, sliding glass doors, w/w carpet, traverse drapes throughout, black wall, 2-car garage, separate laundry room, washer, dryer space, wired 220, built-ins, disposal, forced air heat, hardwood floors, lath & plaster & other extras, \$19,950. UN 5-1779. A

MOVIE CAMERA, 16-mm Bolex, 3 lenses, carrying case, pistol grip & light meter, \$350. OS 5-5800 after 4 p.m. A

GENERATOR, 500-watt, 4-cycle Briggs & Stratton, \$75. 371-8309. A

2-WHEEL TRAILER, 4'x8' box, w/rack, good tires, 1962 license, \$75. 371-6775. A

FLEETLINER, 16', w/1958 Evinrude 35-hp Lark ena., fully equipped trailer, \$850. FR 1-2603. A

PIANO, Hallet & Davis, spinet, \$450; Ford station wagon, 1956, 9-pass., r/h, auto. trans., country sedan, \$550. DA 6-7232. A

HOLLYWOOD TWIN BED, \$35. CR 3-2194. A

BOAT, 8' mahogany dinny, \$50. OS 5-5258. A

BED, 3-quarter size, Hard Rock maple w/head & foot boards, & spring, mattress free if desired, \$30. OS 6-1404 after 6 p.m. A

CHEVROLET, 1949, 4-dr., r/h, good transportation car, \$100; Elain engine, 5-hp, needs tune-up, \$20. DA 3-2351. A

POODLE, black miniature, AKC registered, 1-yr-old, cost over \$100, \$40. TE 5-7655. A

## AD, RIDE FORMS

Going My Way and BBSF forms are available from Company stockrooms.

Going My Way is Form No. 59-228, BBSF is Form No. 59-308.

WET SUIT, custom made, size 7, worn once, \$25. PL 6-2211. A

VOLKSWAGEN, deluxe, sunroof sedan, 1959, radio, new recap tires, \$1100. DI 7-6964. A

BEDFRAME, mahogany w/box spring & mattress, hardwood, \$25; dining room set, Duncan Phyfe, w/4 upholstered step chairs, 60" long drop leaf ext. table, mahogany, \$75. OS 5-2159. A

EXERCYCLE, good condition, \$100; accordion, 120-bass, child's, \$100. OS 6-8331. A

MOTORCYCLE, 1956 BSA, new ena., lots of equip., \$400. FR 1-1445. A

RIFLE, 22 automatic, \$20; tractor, disc, scraper, \$650; stove, oil-burner, \$10; 8 doors, \$1 ea.; air compressor, \$15; chicken wire, 100 ft., \$3; tel pump, \$100; aluminum shower, \$750. VE 7-4237. A

CADILLAC 62, 1959, 4-dr. sedan, white, power equipped, w/6-way seat, w/w, \$3100. DA 9-9464. A

## FOR SALE

DINING ROOM SET, Hard Rock maple, & buffet, \$45. PL 4-4908. A

FURNITURE, to furnish 2-bdrm. house, 7-mo-old, have to move, owe approx. \$476; take over pymts. of \$28 a month for 17 months or will sell separately. OS 5-3909. A

BABY EQUIPMENT, bassinet, \$8; wardrobe, \$10; day bed, \$20; mirror, \$10. OR 0-4342. A

ACCORDION, Universal, 120-bass, 3 switch, w/carrying case, used approx. 3 months. \$135. OR 4-1847. A

MGA 1600 SPORT ROADSTER, 1960, convertible, black, w/beige leatherette interior, r/h, w/w, 23,000 miles, 1-owner, \$1595. OS 6-8768. A

BOAT, 16' fiberglass/wood, remote control, Mercury 35-hp elec. ena., w/aerator, tiltable trailer, gas tank, life preservers, ski rope, wide-beam, flat-bottom, for water skiing, skindiving, fishing, \$780. OW 7-3328. A

STUDEBAKER CHAMPION, 1953, automatic shift, 4-dr., clean, good transportation, \$300. DA 3-7349. A

MGA ROADSTER, 1958, w/wire wheels, \$895. ED 6-3748. A

BOAT, 14' runabout, 45-hp Mercury ena., controls & trailer, 1959 models, \$800; Chevrolet, 1953, 4-dr. sedan, tuck & roll upholstery, good rubber, \$350; divan & chair, beige, \$50; chrome table & 2 chairs, \$20. OS 5-0776 after 5 p.m. A

RANGE, 1956 Wedgwood, aas, w/chrome top, grill, broiler, rotisserie, \$75. OR 7-9389. A

BOAT TRAILER, \$45; TV, Magnavox, 16", \$35; manila, portable, \$20. 645-1274. A

HOUSE, 3-bdrm., wall-to-wall carpet, drapes, sprinklers, patio, BBQ, planters, insulated, in Southwest Torrance, \$2000 dn. \$18,900. FR 5-8257. A

EXPOSURE METER, Norwood Director, professional model, complete w/accessories, never used, \$35. FR 5-3257. A

HOUSE, Hollywood Riviera, 3-bdrm., 2-bath, custom built, used brick planters & fireplace, lots of closets & tile, small down, \$31,950. FR 5-8778. A

PARAKEET CAGE, black, circular, used a short time, like new, \$7.50. OR 2-2969. A

PUPS, black Scottie, AKC registered, championship stock, \$75 & \$85. OR 0-2098. A

SAILBOAT, International 14, cover, trailer, etc., \$900. FR 9-7775. A

TELEVISION SET, 21" RCA console, new picture tube, \$55. OR 7-8775. A

CHRYSLER ENGINE, complete, 1953, rebuilt automatic transmission, \$100. ST 4-6116. A

## WANTED TO BUY

FORD OR CHEVROLET, 4 or 6 cylinder, stick shift, \$250 or less. DA 7-9934. B

## RENTALS OFFERED

ROOM & BOARD, private home, TV, refrigerator privilege, \$18 week. 677-2449. E

APT., deluxe, 1-bdrm., furn. & unfurn., pool, large closets, w/w carpets, carpet, \$90 & up. OR 4-1578. E

APT., large, deluxe, 2-bdrm., unfurn., built-ins, carpets & drapes, close to shopping & Northrop, laundry facilities, \$120 mo. 772-1992. E

VACATION COTTAGE, furn., Newport Beach, sleeps 5, \$60 week, OR 0-4424. A

## PERSONALS

WE WISH to extend sincere thanks and appreciation for expressions of sympathy during the loss of our mother Mrs. May B. "Snowie." MR. & MRS. WM. P. STANYO. L

## FOR SALE OR TRADE

OLDSMOBILE, 1954, power steering & brakes, \$400 or trade for equity in late model station wagon. OR 1-1660. M

PLYMOUTH STATION WAGON, 1960, easy terms, \$1600 or trade for smaller car. TR 7-7967. M

## P-A ACCEPTS BAIL FOR YOUR TRAFFIC TICKET

That traffic ticket need not burn a hole in your pocket or your conscience or your time.

Personnel Activities has made arrangements to accept bail for tickets that do not require personal appearance.

This is a new service. Norcrafters can take their tickets to Personnel Activities. That office will communicate with the presiding judge of the district to determine the amount of bail.

The ticketed Norcrafter gives the bail to Personnel Activities and they send it in.

The sadder, but wiser Norcrafter can then go back to building airplanes and missiles.

## LADIES GET FREE BOWLING LESSONS

Good news for the ladies.

Personnel Activities announces that arrangements have been made with the Tropicana Lanes for free bowling instruction classes for Norair wives, daughters, friends, and neighbors.

The classes start May 29 at 10 a.m. Tropicana is located on Prairie just north of Imperial.

The offer includes free bowling, shoes, coffee, gift items, and game movies from Brunswick.

The instructors, headed by Ty

## NRC ART CLUB OFFERS FORMAL INSTRUCTION

Formal instruction is now being offered by the NRC Art Club, it is announced by Stewart Luce, commissioner.

Instructor John Kayser is an accomplished portrait artist and has won the NRC Art Exhibit Sweepstakes award three times. He has been painting portraits for seven years and has been an



JOHN KAYSER

illustrator at Norair for the same period of time. Instruction is focused on basic figure drawing and portrait painting.

Those interested are invited to visit tomorrow evening.

## HOLE-IN-ONE COMES TO YOUNG PAUL ANDERSON

Paul Anderson, golfing son of Victor Anderson, Corporate Development Planning, has scored a hole-in-one.

The rare dreamed-about shot was made on the seventh at the Sea-Aire Golf Course in Torrance.

The precision clout was made with a nine iron. It looped beautifully, stated onlookers. It took two bounces and landed cleanly in the cup. Whammo!

Young Paul is a fine athlete. He was an all-star little leaguer and is now heading toward football and basketball.

Verifying witnesses to his hole-in-one were Paul's proud father Vic, Corporate Patent Administrator Willard Graham and Willard's son, Eric.

## ODDITIES MARK PATENT HISTORY, HAIR OIL IDEA TOPS THE LIST

Norcrafters are very prolific and ingenious patentwise. In the 23 years of Company history, over 1000 certificates have been issued. The range has been all the way from complete airplanes to a 3/8-inch high transistor clip.

But none have so far approached the exclamation point factor of a hair oil patent granted to Friedrich Wilhelm Emil Muller in 1909.

The description from the Army Research and Development News magazine:

Theisen, are certified. Mr. Theisen is a member of Brunswick's advisory board.

In addition, Tropicana has a supervised playroom for children, two years and older.

## The Scout Oath, a Most Perfect Rule to Live by

Once again another Scout year has come to an end.

To me it was a year in which I had the pleasure of being the Institutional representative of NRC sponsored Scout Family 262.

Our chief concern is boys. Boys are the raw material that comes through our mill, but it is the

BY BILL WAREING  
NRC SCOUTING  
COMMISSIONER

leaders who mold the boys and guide them along the paths to the finished product.

I say "paths" for there is no single mold for a Scout. Boys come to us with many ambitions and desires, with a common wish to have fun and belong to groups who are approximately their own age. The adult leaders, then, have the challenge to give the boys an opportunity to participate in an adventure program that in its very essence teaches good citizenship and love of God and country. The end product, for a boy who stays with scouting, is usually a realization of his skills and ambitions. This is accomplished by a high level organization that brings scouting to the boy.

To be a part of this great team which builds character in our youth so that our leaders of tomorrow will be strong, has been a challenge and a privilege that I will not forget.

It has been said that next to the Ten Commandments, the Scout Oath and law offers the most perfect rules to live by. If everyone could understand and

## NRC CAMPERS JOURNEY TO CORRIGANVILLE

The next NRC Camping Club campout will be held at Corriganville movie ranch, it is announced by Fred Armstrong, commissioner.

Corriganville is located in the Santa Susana Pass area, five miles north of Chatsworth on State Route 118. Dates of the outing are May 26 and 27.

Features include camping exhibits, outdoor movies, western stars, movie and TV stars, dancing.

Cost runs \$2 for adults both days, \$1.25 one day. Less for children.

To sign up, simply go to Tropicana Lanes when the classes start as noted above.

Number of participants is unlimited.

Course will be for four weeks.

practice this, how much less strife the world would see.

It is natural for boys to belong to gangs. The question is what



BILL WAREING

kind of a gang is it going to be?

Scouting makes the difference in a boy's life because it is a gang, learning and enjoying growing up together under the guidance of trained leaders. There are 1,250,000 trained leaders enrolled in scouting.

The development of our youth to be physically strong, mentally awake, and morally straight, to be citizens of character with high spiritual ideals and motives is not just a desirable thing. It is essential if America is to fulfill its mission as the leader of the free world. To this end, scouting is preparing the boys of our country for vital participation as men in the affairs of the nation and of the world.

Because we have confidence in the Boy Scouts of America and its contribution to physical fitness, character building, and citizenship training, we must go forward with it aggressively. We must safeguard the future of our country by training our youth in Christian ideals which will, in turn, guarantee the future freedom not only of America but of the world.

This is the goal to which the Boy Scouts of America stand dedicated.

## SLO-PITCH BALL STARTS JUNE 5

More teams are needed to round out the NRC's new slo-pitch softball league due to start Tuesday, June 5 at Alondra Park. Ten men constitute a team.

Particulars of slo-pitch softball:

It is the softball sport especially designed to improve physical condition and have fun at the same time.

The game offers all the thrills of regular softball but on an intensified basis.

There is more opportunity for fielding, hitting, throwing, and running.

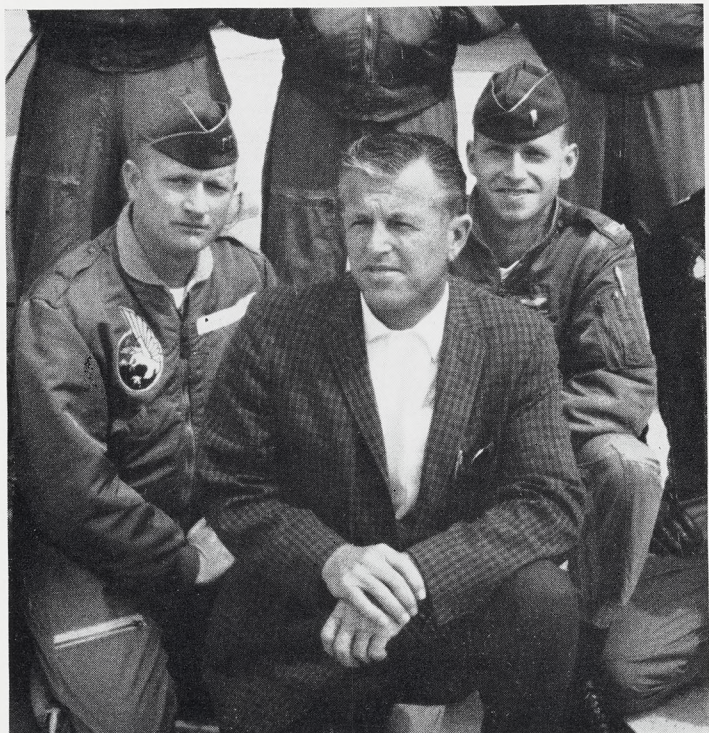
Slo-pitch softball is played with an oversized 16-inch ball which must be pitched in an arc and usually with a spin and at a slow rate of speed.

All Norcrafters are cordially invited to participate.

Call Don Greco, Extension 2784 for particulars.



# The Air Force . . . . the Navy . . . . and the Marines



**IPIS GRADUATES**—Hank Waklee, Norair tech rep at Randolph Air Force Base, sends photos of first instructor pilot instrument school students to graduate there in the T-38. Training started in January, continued through eight-week period. Photo shows Mr. Waklee with graduating students First Lieutenant L. L. Patton, ADC, Webb AFB and Captain J. S. DeHart, ATC, Williams AFB.



**MORE GRADS**—Training included 26 hours in the T-38, 16 hours in the T-7 trainer, and 100 hours of classroom. Men and their commands from left, front row are Captain W. Mains, ADC; First Lieutenant Patton; First Lieutenant W. A. Tucker, ADC, Griffiss AFB; First Lieutenant J. J. Henderson, TAC, England AFB. Second row, from left, Captain V. J. Connolly, ATC, Randolph AFB; Captain DeHart; Captain E. G. Adkins, ATC, Randolph AFB; First Lieutenant O. I. Knutson, ATC, Webb AFB; Captain J. H. Felder, ADC, McChord AFB; Captain C. A. Herning, ATC, Williams AFB. Third row, from left, are Randolph AFB IPIS instructors Captains J. M. Barker, J. S. Jayroe, D. L. Baumgartner, C. W. Bean, jr., E. M. Sutton, J. R. Mularski, and Major G. W. Holt, flight commander.

## NEWS BRIEFS

(Continued from Page 1)

which scientific knowledge is applied in carrying out the Air Force mission. It especially serves to review and evaluate long range plans for A-F research and development. It also recommends placing of selective emphasis on unusually promising scientific fields.

**T-38 HOURS AT WEBB**—During the month of April, the T-38 airplanes at Webb Air Force Base racked up a total of 2026:35 flying hours, it is reported by Al Eldridge, Norair technical representative.

**DISTINGUISHED VISITOR**—R. H. Dickman, chief, Industry Analysis Branch, Directorate of Procurement, Air Force Systems Command, visited Norair last week, it is reported by Bob Lloyd, vice-president and assistant general manager, Operations. Mr. Dickman was briefed on the Division's management sciences including such areas as Automated Operations Control, Long Range Planning, Integrated Management Systems, Target Cost, Materiel Procurement and Subcontract Management. He was also taken on shop tours of the T-38 line and numerical control complex, Manufacturing Research and Development laboratories and the new honeycomb brazing facilities. Mr. Dickman in turn outlined contemplated changes in Air Force requirements in AMPR/MMPR reporting (Aircraft Manufacturers Planning Report/Missile Manufacturers Planning Report). Norair's Gil Warrick, Finance, is credited with contributing valuable simplification know-how to the new system through his AIA subcommittee chairmanship on AMPR/MMPR.

**A-OKAY** — Vice Admiral Clarence I. Ekstrom, commander, Naval Air Pacific, gives thumbs up okay sign following North Island demonstration flight in the T-38A.

**DEMONSTRATION** — Rear Admiral Wm. Martin, chief, Naval Air Reserve Training Command, returns from T-38 demonstration flight with smile of approval. Flight was from Edwards.

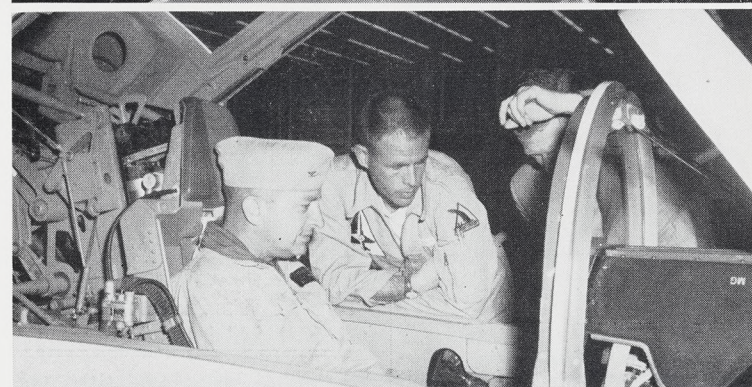
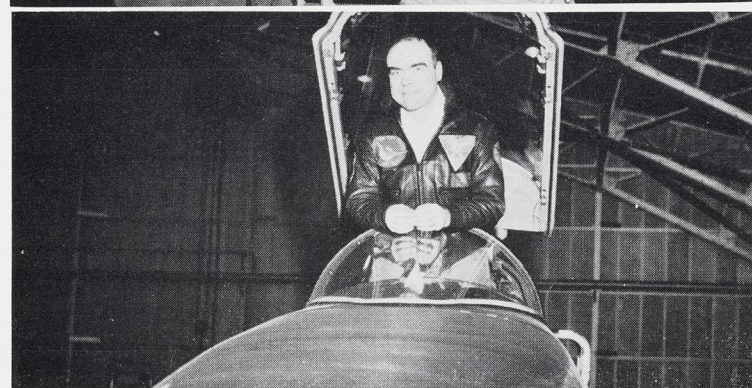
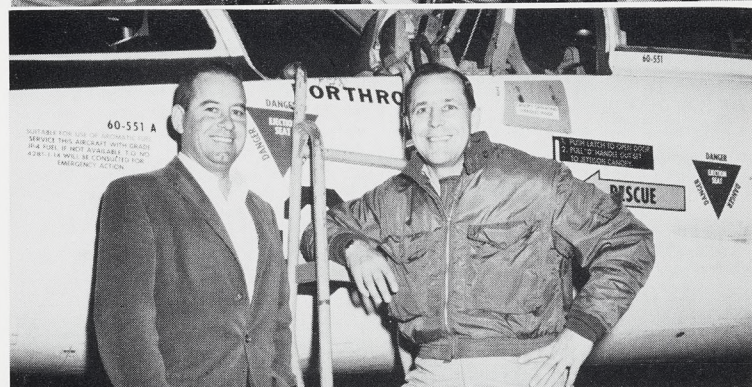
**JACK FARLEY**—Jack Farley, Norair Edwards base administrator and Captain Paul E. Pugh, head of Navy's Sea-Based Air Striking Forces Section, DCNO (Air), following the Captain's T-38 hop. Captain Pugh liked our new trainer. Mr. Farley is ex-Navy fighter pilot and Norair test pilot on the Scorpion.

**PLANNING**—Captain Pierre Charbonnet, jr., signifies satisfaction following his T-38 demonstration flight from Edwards. Captain Charbonnet is head, Planning Requirements Branch, DCNO (Air).

**COLONEL LAWRENCE**—Colonel Hamilton Lawrence, chief of Staff, Third Marine Air Wing, is given cockpit check by Norair's Lew Nelson, director, Test section and John Couberly, chief, Navy Aircraft Programs, Marketing, prior to a demonstration flight in the T-38. Colonel Lawrence also voted the T-38 a fine airplane.

**MARINE CORPS** — Marine Major R. L. "Bob" Wildey, project officer, Aircraft Division, BuWeps, boards T-38A for demonstration flight. He was pleased with performance, handling, and T-38's ability to get upstairs, downstairs and over there fast, fast.

**USN**—Navy Captain Max Munk, thinks the T-38A is okay. Photo was taken following his flight at Edwards. Captain Munk is Patrol and Support Design officer, Aircraft Division, BuWeps. Norair pilots accompanying Navy and Marine officers on flights were Hank Chouteau and Drury Wood.







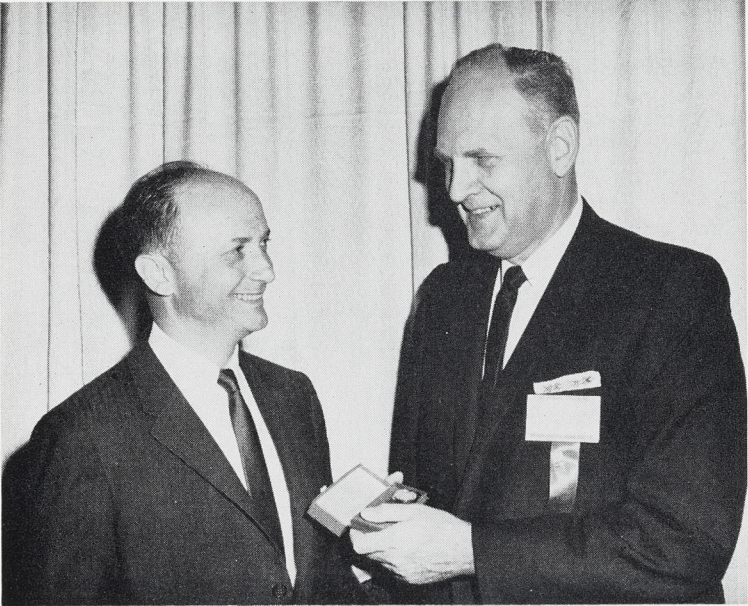
# Northrop-Norair News

Issued biweekly by Norair Division of Northrop Corporation

Wednesday, June 6, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, RAPID CITY, EL PASO



**SIGNAL HONORS**—Corporation Comptroller Joseph Corie, at Dallas meeting, received American Society of Training Directors award to Northrop in recognition of the Company's support and advancement of the training profession. Mr. Corie in turn had honor of presenting the Society's gold watch appreciation gift to Dr. Vernon B. Sheblak, Norair Division chief, Management Development and Training, who served as president of ASTD for the past year. Meeting was 18th annual conference. ASTD is an international professional organization devoted to the advancement, development and education of men and women in industry and government.

## NEWS BRIEFS

**ASSESS FISCAL '62, DEVELOP FISCAL '63**—May, June, July are significant report and planning days for Division management as the fiscal year draws to a close. Corporate Vice-president and Norair General Manager Dick Nolan has announced that:

**On 15 May**, the capital asset budget for Fiscal Year 1963 was submitted to the Corporate office.

**On 1 June**, last Friday, the Management Planning Council held the third quarterly review of the Division Plan. This to assess progress so far this year and prepare for the coming year and to evaluate direction and product emphasis for remaining quarter.

**On 15 June**, the proposed Division Plan for FY 1963 will be presented to the Management Planning Council for consideration. Basic input data is being coordinated by Walt Fellers, director, Long Range Planning group.

**On 13 July**, the Division will present the FY 1963 financial forecast to the Corporate office.

**MASTER PARTS LISTING**—Excellent progress is being made in the implementation of the Master Parts Listing system under Integrated Management Systems, it is reported by T. L. McCarthy, manager, Administration department. A new Master Parts Listing branch under George Pond has been established in the Technical Administration section. This branch is now being staffed. Computer programs are being written under the direction of Norvel Humphreys in the Computing and Data Processing section. First output from the MPL system will go to Materiel on 27 August and will provide detail requirement notices and procurement schedules  
(Continued on Page 2)

## Training Program Underway To Certify Lift Operators

A major step in Norair's effort in the prevention of injury to personnel and damage to materiel is the newly developed program to train and certify all "in plant" operators of lift and transport equipment. Equipment such as cranes, forklifts, tow tractors, and Daihatsus.

Industrial Training has combined motion pictures, color slides, printed booklets and actual field practice into one of the most advanced training courses of its kind in the industry.

Norcrafters who successfully complete the course in lift equipment receive as graduation gift

a wallet-size certificate attesting to their skill as operators.

The certificates are valid for two years and may be renewed on request.

Old style certificates which do not have an expiration date will become invalid and must be returned to Norair Safety Engineering for disposition.

Supervisors who require certification for members of their organization should obtain Form 59-438 from Stationery Supplies or from Industrial Training and mail to Industrial Training. Refer to SPP 2-10 for other details.

## ENGINEERING LABORATORIES TUNED TO CUSTOMER NEEDS

Norair's Engineering Laboratories, a complex of test facilities capable of handling the most sophisticated tasks in the industry today, has been contributing significant data to a wide variety of nationally important projects.

This in addition to their regular work in support of all Norair prime contracts.

Some of the more glamorous assignments include contracts on the Minuteman with the Kennard Division of the American Air Filter Company for environmental tests on the climatic control system. This work helps assure proper functioning of the missile's silo launch machinery under the most severe conditions of heat, cold, shock, vibration, and other

adverse circumstances.

Work on The Martin Marietta Corporation's Titan in acoustical environmental solutions.

On the North American Columbus Navy A-3J (Vigilante) in qualification testing of ground support equipment.

The Convair Atlas in component qualification.

On the Lockheed-Sunnyvale Polaris—work in the evaluation of beryllium joint strength while in a high temperature environment.

Engineering Laboratories is under the direction of Royal Jackman, chief.

Another unusual assignment, in that it supports one of Norair's own advanced projects, is Lamin-

ar Flow turbine environmental tests for AiResearch, subcontractors to Norair for LFC pumping equipment.

"Our 'outside' contract work



ROYAL JACKMAN

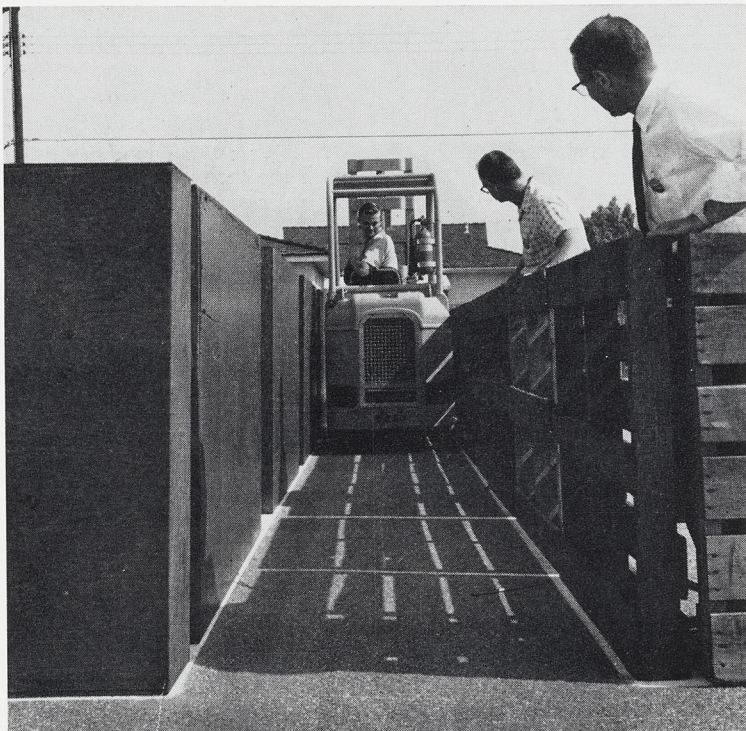
will show an increase this year over last," stated Mr. Jackman. "And the uptrend should continue in 1963."

One of the "secrets" of Norair Engineering Laboratories' success with the industry in this highly competitive and highly sophisticated field is that the labs are tuned to customer convenience.

Administrative control of small subcontract testing is provided by Engineering Laboratories in which they:

- (1) Receive the request for quote from the customer.
- (2) Develop the cost estimate, including pricing, in keeping with Norair Accounts and Pricing policies.
- (3) Negotiate with the customer as necessary.
- (4) On receipt of contract go-ahead, obtain allocated budget and cost reports from Finance.

"If the statement of work from the customer is reasonably complete."  
(Continued on Page 2)



**STRAIGHT AND NARROW**—Jim Halpain, forklift operator, threads 70-foot expert driving needle—only two inches to spare on each side—as part of Industrial Training's lift equipment certification program. Operator Henry Christy lends moral support while Instructor John Fink does the grading.

### REFERRAL AWARD LIST

An award of \$100 will be paid for the referral of applicants in the following classifications:

- Engineer
- Engineering Project Administrator
- Engineering Project Assistant
- Engineering Reliability Coordinator
- Research Analyst
- Engineer Senior
- Engineering Project Administrator Senior
- Engineering Reliability Coordinator Senior
- Engineering Specialist
- Research Analyst Senior
- Scientist
- Scientist Senior
- Senior Technical Specialist
- Member of Senior Technical Staff



**FORKLIFT SLALOM**—Now it's Henry's turn to certify as he weaves through forklift obstacle course. John Fink again does monitoring. Certification is part of Norair program in prevention of injury to personnel and prevention of transit damage to Division defense products and equipment. Both Jim and Henry won their "paper". Renewal is required each two years.



## NEWS BRIEFS

(Continued from Page 1)

on common parts. By 8 October, the MPL branch plans to be current to engineering releases on new contracts. As reported earlier, the MPL system is the key to systematization in Materiel, Logistics and Production Planning. Further developments will follow the successful completion of the MPL effort.

**STANFORD RESEARCH INSTITUTE**—Today, 6 June, specialists from Stanford Research Institute visited Norair for presentation on management planning to top Company officers, it has been announced by Dick Nolan, Corporate vice-president and Norair general manager. The discussions, held in the board of directors room in the Administration Building, covered topics concerned with environmental change and corporate strategy.

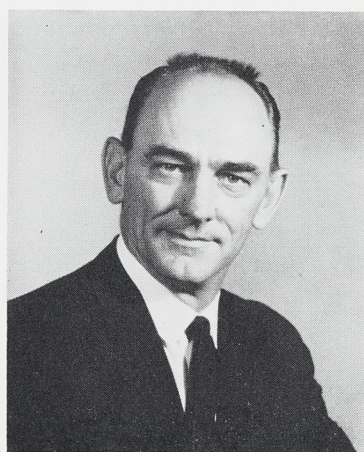
## Norair Customer Relations To Be Headed by Dan Darnell

Daniel Darnell, jr., has joined Norair as manager of the Division's Customer Relations department.

Mr. Darnell was formerly manager of Customer Relations for the Autonetics Division of North American Aviation, Inc., a position he had held since 1957.

A native of Dallas, Texas, Mr. Darnell served in the U.S. Air Force from 1942 to 1950, attaining the rank of major. During World War II, he received numerous decorations, including the Distinguished Flying Cross.

engineering test pilot. During this time, he was responsible for and participated in all phases of ex-



DAN DARNELL

perimental flight tests of the F-86, F-100, A-J series airplanes and various trainer aircraft.

He is a member of the Institute of Aerospace Sciences, Air Force Association, Navy League of the United States and is a Fellow in the Society of Experimental Test Pilots.

## From the Congo



**FROM THE CONGO**—Delegation of Congolese students studying at USC visited Norair during Public School Week for plant tours and briefings on methods and products. They are shown here at the Division schoolhouse project with Norcrafters W. F. Hunt, supervisor, Machined Parts Inspection and Jack Hebard, senior marketing representative, Major Subcontract Marketing department. Students from left are John Petelo, Justin Ikanga, Antoine Muibou, Bernard Elofa, Pierre Iwo, and John Kangu. When the men return to their native land they will teach in their schools and universities. Mr. Muibou is director general of Education, Congo Republic. Of high interest to the visitors was Norair's management and industrial training program briefed by Dr. Vernon Sheblak, chief, Management Development and Industrial Training; and Clarence Stine, general supervisor, Industrial Training. They were also delighted by the Company's modern schoolhouse concept. The group was hosted at a luncheon by Bob Catlin, manager, Quality Control.

## SOCIAL SECURITY TAX, WHAT FOR, HOW MUCH THE BENEFIT AND WHEN

Ever wonder what "F.I.C.A." means? Those foreboding initials appear on your every paycheck. Literally, they stand for "Federal Insurance Contributions Act".

Or, in just plain language, your social security tax.

This year the F.I.C.A. tax was raised to 3 1/8% of your salary up to \$4800. There is no social security tax on wages above that figure. This means that the most

any employee can pay in 1962 social security taxes is \$150. Northrop matches whatever you pay, so \$300 is the most that can be paid on any one employee during 1962 into the social security trust fund.

What can you expect from this contribution?

You can expect to retire at 65 after averaging \$4800 per year during your working years and draw a monthly benefit of at least \$123, although the law provides up to \$127 a month for workers retiring in the far future.

If your wife is over 65, she'll be entitled to an additional one half of what you get. If you have both a wife and a child under 18, they'll both be entitled to an additional half of your benefit at 65, except that \$254 is the highest monthly amount that can be paid to any family.

If you and your wife decide to take benefits at age 62 instead of waiting until 65, your benefit will be reduced by 20% and your wife's by 25%.

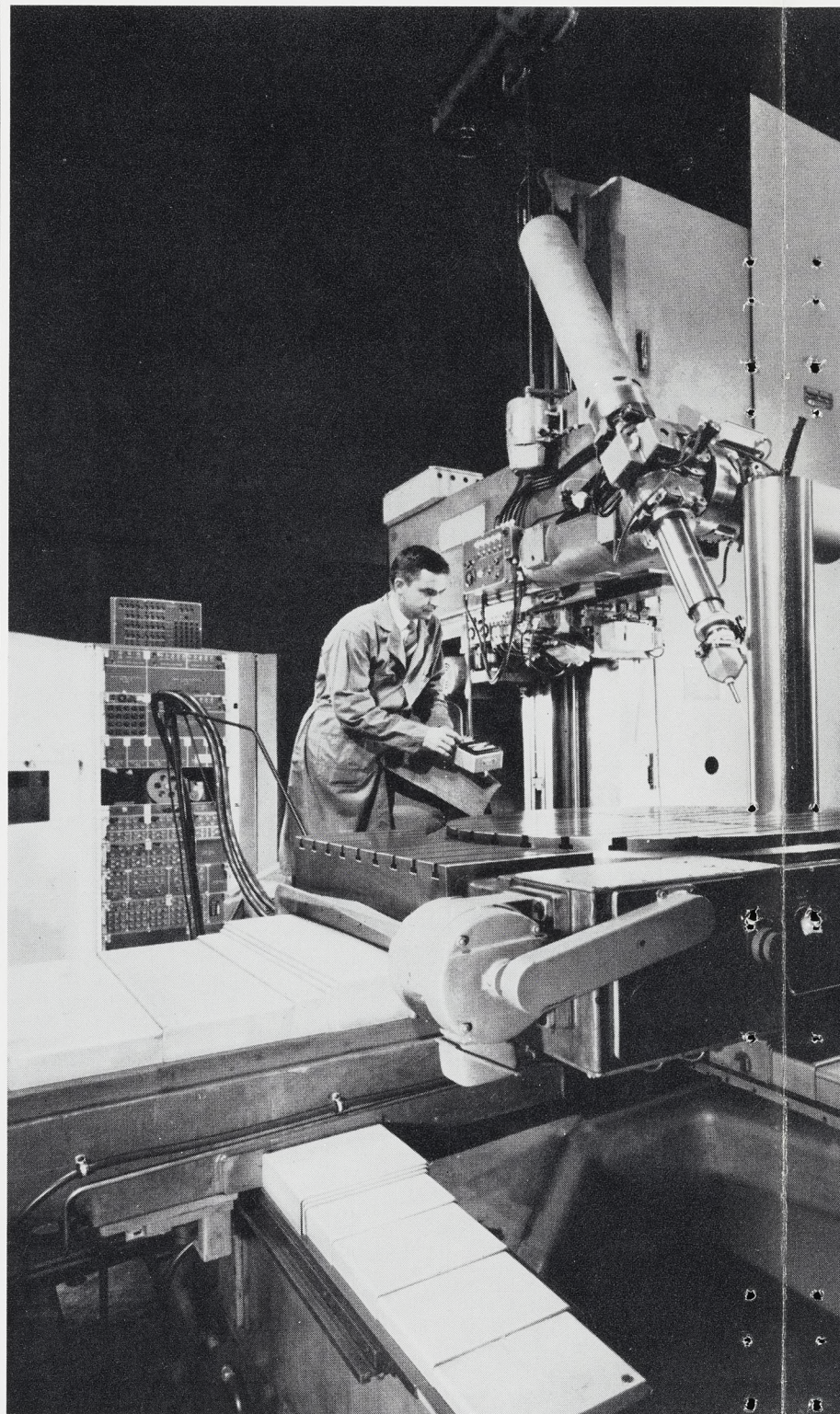
If you become permanently disabled before 65, you can receive your full benefit as though you were 65. Your family would

**By BILL MATTHEWS**  
Social Security Manager,  
Inglewood

be entitled to benefits just as though you had reached retirement age.

Social Security protection extends beyond retirement and disability to the unpleasant possibility of death before retirement. Your survivors—including dependent parent as well as widow and children—may be entitled to as much as \$254 in monthly family death benefits. If you leave only an aged widow, she can draw a monthly benefit of \$101.50.

Well-informed Americans should know what they are paying for. That F.I.C.A. legend on your paycheck involves your family's future.



**NUMERICAL MEASUREMENTS**—Quality Control's new Pratt & Whitney 4EA Universal Inspection Machine is the third of its kind in the United States. The other two are at work in P&W's own shops. The 4EA, a great but tender giant in the precision world, measures electronically to .000010 of an inch by an electromagnetic center sensing system. Measuring programs can be programmed entirely by tape or fed manually. Entire shapes

such as a complete v plane or a wing section dimensions inspected works from one to z to rapidly perform h infinite number of ti stalled in special air c ters at the north w Plant One.



THE time of the inspector's "they shall not pass" mentality is gone. In its place is a modern Quality Control establishment, as capable and as confident and as self-assured as the sciences it serves.

Control of quality can be divided into three objectives:

- (1) Preventative measures to avoid making errors in the first place.
- (2) Detection and isolation of errors already made.
- (3) Corrective action to assure no recurrence of the same error.

Back in the so-called "good old days", the inspection task was a relatively simple and easy one. Parts and end products came to Inspection, they were checked and either accepted or rejected. Inspection had no real concern as to how the defects originated or what was going to be done if anything to correct the conditions causing them.

Under the leadership of the Division's forward-looking management efforts, the inspection concept rapidly developed into the Quality Control function as we know it today. Norair pioneered the statistical approach in our industry. Inspection no longer

just rejected defects and forgot about them. Instead, rejections were categorized and when patterns developed indicating what could normally be expected of an operation, quality levels were established. Feedback systems notified production managers of trouble areas, corrective action was achieved, quality, costs, and schedules all benefited. Inspection became Quality Control and a very active part of the team.

#### TAPE CONTROLLED

Quality Control today is made up of so many activities that it would be impractical to delineate them all. However, several areas of endeavor that may not be well known to all personnel are considered worthy of special acclaim.

The latest addition to Quality Control's measuring capabilities is the new Pratt and Whitney numerically-controlled measuring machine. The 4EA, as it is known, is a massive, extremely accurate tape-controlled measuring machine, unequalled in the airframe industry. Reliability and repeatability of measure-

ment are checked by Quality Control personnel prior to tool fabrication.

A close cooperative association is maintained with all of Tool Engineering in this field of activity. It is noteworthy here that when a problem develops in the manufacturing, flight, or preflight phases applying to dimensional control, all the many capabilities of Tool Engineering and Quality Control are joined in a cooperative effort to resolve the problem in the most expeditious manner.

In the field of linear calibrations, working standards are calibrated with equipment obtaining read outs to one millionth of an inch increments. How large—or perhaps one should say—how small is a millionth of an inch? An average human hair divided two thousand times would be reasonably close. In order to conform to national standards of measurement, all Norair company and employee-owned precision measuring devices are compared against reference standards of the National Bureau of Standards

*"Woody" Conkling is a 21-year Norcrafter. He went to work for Northrop as a trainee on the Black Widow. His first job was jig builder "C".*

Norair products can be attributed in large part to the environmental tests conducted by Quality Control. Subzero to hyper-temperatures, terrific vibrations, shocks, and environmental conditions are introduced to the test specimen while it is operating at anticipated maximums.

#### MAKE IT FAIL NOW

The objective of these tests is to make the subject fail if possible and to exactly measure the conditions of failure. If the conditions of failure fall within the safety factor of the aircraft or missile, then components of that design and reliability will never be installed on a Norair product.

Receiving Inspection also maintains the finest nondestructive test capabilities available.

The Baird-Atomic direct reading spectrometer is capable of isolating 18 elements simultaneously. In keeping with Quality Control's intent to minimize operator error and automate to the maximum possible, this equipment is also equipped with an automatic recorder of results. Graphs from masters of known composition are compared with graphs from the unknown and the composition is readily ascertained. One can rest assured that the multitude of special alloys used on Norair products truly meet all engineering requirements.

Contamination control is another fascinating aspect of Quality Control's function. Hydraulic fluids and special lubricants require exceedingly pure products

# The Quality of Norair Products

Evolution and growth of Norair's Quality Control department has paced the advance of the aerospace industry. As the sciences and technologies developed, Quality Control also developed. The techniques of the department, the management, the concepts, have undergone the same satisfying evolution that has been marked by the Division.

ments relevant to complex detail parts, tools, and assemblies assure product quality and customer satisfaction. Objects to 48"x60"x100" in size are measured to tenths of thousandths of an inch accuracy with an ease heretofore impossible to obtain.

The machine operates in a manner similar to the tape-controlled milling machines in the production machine shop. After the subject has been staged to the machine geometry, punched tape guides the machine probe to predetermined points of inspection. The probe will pause momentarily at each point, measure the difference between theoretical and actual and, through an automatic electric typewriter, type out the results.

#### FOR COMPLEX SHAPES

Aside from providing unequalled assurance of quality in existing products, Quality Control can assume any number of measuring tasks from future customers where shapes are complex and extreme accuracy of measurement is important. One such example might be a wind tunnel model; a model of the type normally created for aircraft such as the T-38 can be single staged on the machine and completely calibrated in a fraction of the time required for what Norair Quality Control now considers to be the old and obsolete methods.

Closely associated with Quality Control's numerical activity is the section related to dimensional control. This group reviews all manufacturing activity relevant to product dimensional control and assures that Quality Control will have adequate methods, check fixtures, and measuring equipment to assure product quality. Tool Design vellums on tools such as check fixtures or any tooling used by Inspection to verify critical dimensions are meti-

in Washington, D.C.

Just as the Norair and employee-owned equipment is periodically recalled to the gauge room for recertification, so are Inspection's reference standards periodically sent to an independent NBS approved laboratory for recertification.

#### THE GAUGE ROOM

When one considers the thousands of items controlled, it becomes apparent that this task in itself is no minor business operation. Only the most efficient scheduling and strict adherence

The new Curtiss Wright ultrasonic inspection machine developed to Norair specifications represents the very latest in this field. The purpose of the equipment is to detect flaws inside of completed products such as honeycomb panels and raw stock prior to machining or other expensive manufacturing operations without destroying usefulness. The unit is automated to assure repeated paths of view and equipped with an automatic facsimile recorder. The recorder minimizes operator error and makes possible the an-

**By W. H. "Woody" Conkling  
Supervisor, Tooling Inspection**

to the control system by both Quality Control and Manufacturing makes it possible for this multitude of items to continuously flow through the gauge room with no adverse effect on manufacturing operations.

Receiving Inspection and Quality Control Engineering have made tremendous gains in the area of environmental testing in proving or disproving such items as gear boxes, relief valves, pressure switches, regulators, electronic and electrical components, equipment which must perform with 100 per cent efficiency in extreme environments.

#### ENVIRONMENTAL TESTS

Too often we take for granted the Engineering, Manufacturing, and Quality Control efforts expended to produce products that remain trouble-free under the most severe torture tests imaginable. Some of these components are so critical that it all resolves down to either the unit does not fail or the pilot dies and his multimillion dollar aircraft is reduced to rubble. The fact that these failures are not present in

analysis of results by more than one analyst without the analyst being present at the time the test was made.

This equipment represents preventative quality control in one of its best forms. It is not too uncommon for billet stock to be received with internal flaws or holes that are not visible on the exterior surface. The billet stock goes through many expensive machining and processing operations before it becomes a usable part. All of these operations are wasted if the material is found to be defective after the operations have been performed.

Quality Control Engineering, working closely with Receiving Inspection, performs many chemical, metallurgical and tensile analyses to further assure the integrity of products. When new materials arrive, they are not assumed to meet specifications just because they are properly identified and pass hardness tests. Each alloy is examined for proportions of specified elements and to assure that contaminating elements are not present.

to assure reliability. Using a Coulter counter and powerful microscopes, particles of contamination are measured in millionths of an inch increments. The particles are not only measured for size, but the number of particles a unit of measure is also determined.

#### THE TINIUS OLSEN

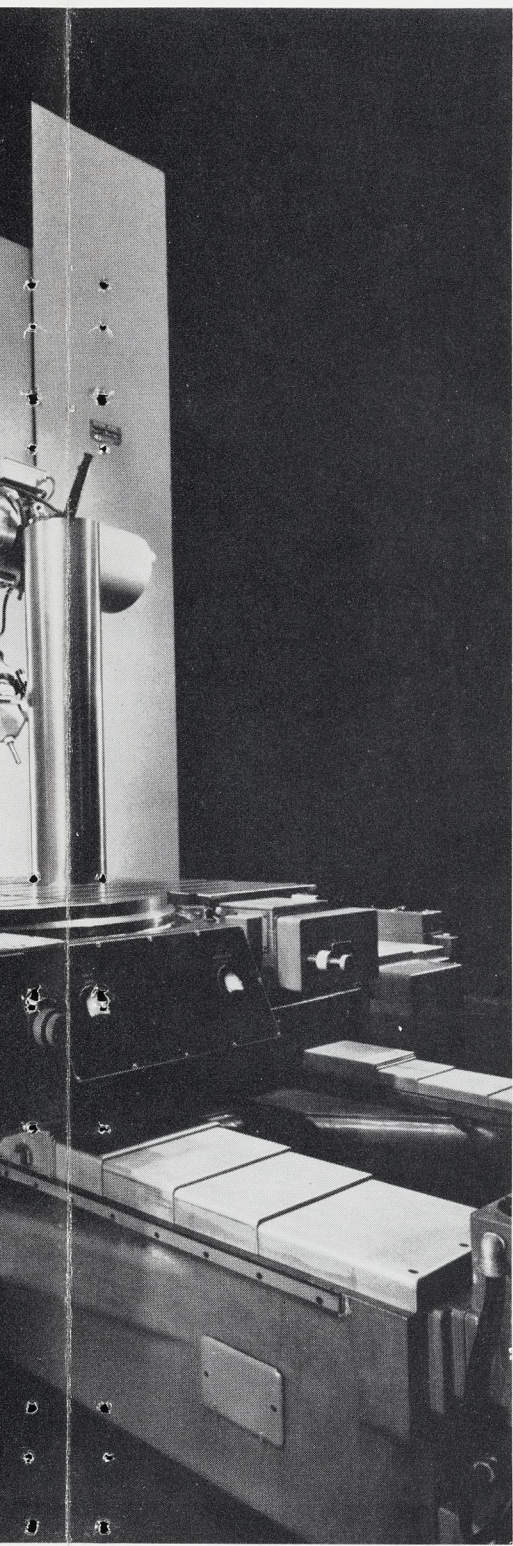
The Tinius Olsen electromechanical testing machine provides maximum assurance that raw materials meet desired strength requirements. Samples are subjected to strain, deflection, and yield tests for further reliability of product.

One can readily see from the many activities of Quality Control that the excellent quality and reliability of Norair's products are obtained through careful examination and control of all of the materials and manufacturing elements employed in the creation of products. A quality-conscious management has determined that Norair products shall be second to none and they have backed this up with facilities and equipment which a few years ago would have been considered fantastic.

As to the future, Norair products will remain unexcelled. There is an Employment office slogan stating, "The Quality of Norair Products Begins Here". With the many millions management provides for modern and updated facilities and equipment, there is the constant will and effort and craftsmanship and capabilities and know-how of dedicated people.

It is something to be proud of. It is very satisfying.

When the Air Force tells the nation that the T-38 during the Edwards program was the first Mach-plus airplane to complete more than 9000 hours without a major accident, this pretty much sums up the job.



complete wind tunnel model of an aircraft wing section may be programmed and inspected automatically. The machine can measure one to zero; it can be recommended to perform hundreds of measurements an hour. The 4EA has been inspected in special air conditioned tremor-free quarters in the north wall of the high bay area,





## RIDES OFFERED

7:30 a.m. — 4:15 p.m.

WESTERN &amp; 9TH, San Pedro, F. G. Nicolay, ext. 3-214, TE 1-5158.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

HOUSE, 3-bdrm., 2½ baths, 1870 sq. ft., beam ceilings, 35' covered patio, sea view, 15 min. from Norton Research Park. \$37,900. FR 7-4634. A

VINCENT BLACK SHADOW, 1954, excellent condition. \$500. TO 2-8321. A

DRAFTING MACHINE, K&E, \$75. FR 8-5810. A

RAMBLER, 1959, custom station wagon, w/stick shift, overdrive, r/h. \$1595. LE 9-5664. A

REFRIGERATOR, Servel 2-dr., automatic defrost, 11.5 cu. ft., \$100. DA 4-8266. A

ROLLER SKATES, 2pr., lady's shoe-type, 1 size 5½ & 1 size 6, \$15 ea. freezer chest, Ben Hur, 21 cu. ft., elec., \$100. OX 3-5257. A

CHEST OF DRAWERS, \$7; toy chest, \$3.50; shampoo tray, porcelain, pastel green, w/all attachments & plumbing fittings, \$25. OS 6-9989. A

ORGAN, Thomas, & bench, walnut, double keyboard, 1 octave bass pedals, 2-yr-old, earphones included for silent practicing, \$750. FR 1-2711. A

AUDIO FIDELITY, custom precision component & TV, in custom black lacquer cabinets, 3 3-way speaker systems, University, Jensen & Stevens w/control switches for each system, cost \$1400. \$666. OR 3-1539. A

SCOOTER, 1958 Allstate, runs perfectly, \$85; dinette set, chrome, w/4 chairs, \$15; Hollywood bed, w/box springs & mattress, \$20. OR 7-2828. A

REFRIGERATOR, Frigidaire, 9', \$50. OS 6-7820. A

CHORD ORGAN, beginner's, spinet, Estey, walnut, & bench, \$150. FR 2-3827. A

HOUSE DOORS, 6, inside, 3' width, \$4 ea. FA 2-0677. A

RANGE, Hot Point, elec., 1956 model, cost \$540, \$75. AX 3-5951. A

EXPOSURE METER, Weston Master III, & case, \$16.50; flash unit & case, Zeiss Koblitz, complete w/battery, in original carton, \$6. ST 8-9709. A

TENT, 3-room, 7'x17', used twice, \$50. OS 6-0573. A

GO-KART FRAME, wheels, brake, strong pipe-welded, \$15; surfboard, broken wood w/Fiberglas covering, 8', \$25; accordion, 120-bass, Castle, black & white, w/case, \$165. FR 6-6399. A

TRAILER, 2-wheel, 4'x7' box, good tires, 6-hlv, \$40. FR 2-0101. A

TEMPEST LEMANS, 1962, blue interior, white exterior, automatic trans., w/w. r/h, tinted glass, 6000 miles, \$2600. OR 0-6408. A

AUSTIN-HEALEY, 1959 white, 2-seater, immaculate in & out, \$1700. GE 1-0658. A

SWEEPER, Hoover, w/attachments, upright, \$30. OR 7-5080. A

HOUSE, custom built, 4-bdrm., 2-bath, built-ins, patio, approx. 1830 sq. ft., in South Redondo area, \$34,500. 378-6521 after 4 p.m. A

BICYCLE, Schwinn Corvette, 3-spd., 26" boy's, \$20. FR 4-8094. A

SOFA, chair & matching ottoman, beige w/old threads, \$100. OR 4-6390, after 7 p.m. A

IANE CEDAR CHEST, Salem maple finish, \$25. TE 5-7655. A

PLYMOUTH, 2-dr., Cranbrook sedan, 1953, 60,000 original 1-owner miles, r/h, new tires, \$300. PL 6-3472. A

HOLLYWOOD TWIN BED, Barker Brothers, box springs & mattress, \$30. CP 3-2104. A

WASHER, Frigidaire, completely overhauled, \$50. PL 6-0768. A

GAS RANGE, Kenmore, 36", w/ariddle, 1-yr-old, \$110. 675-0742. A

DISCOUNT TICKETS, 2, to the Seattle World's Fair, each ticket admits 2 adults & includes admission to special exhibits & attractions, \$5.85 ea.; chord organ, Casio, 60-bass, \$27.50. FR 5-5760. A

40 AUSTIN, 1951, 4-dr., r/h, good paint & interior, new tires & battery, extra motor, transmission, rear end, radiator, \$145. FR 7-3744. A

CADILLAC, 1959, 4-dr-sedan, white, all power, w/w, \$3100; 9 lots, Inglewood Park Cemetery, El Portal section, double interment privilege, cash or terms, \$400 ea. plus transfer fees. DA 9-9464. A

## EL RIVINO AT RIVERSIDE NEXT FOR NRC CLUB

El Rivino Country Club will be the scene of the next NRC Golf Club tournament, it is announced by Ken Clayton, commissioner.

The date is Saturday, June 16.

El Rivino is in Bloomington near Riverside, California. Take the Riverside or San Bernardino Freeways.

Cost is \$4 for each golfer and tee time is 11 a.m. Deadline for entries is Monday morning, June 11.

Check in at Personnel Activities for forms and fee payment. Maps are also available at Personnel Activities.

Meanwhile, scores from El Rancho Verde are now posted with overall low gross going once again to Leonard Burton who shot a 75.

Overall low net turned up a tie between Tom Stinson and Ted Fujimoto with a 68.

First flight was won by Ted Deguisne with a net of 69.

Second flight went to Don "Snuffy" Smith with a 71.

Howie Watt won the third flight with a 70.

## FOR SALE

HOUSE, 2-yr-old, Colonial-style, 3-bdrm., 1½ baths, corner fireplace, 3 picture windows, ocean view opposite Catalina, excellent neighborhood for children, near school, \$1000 below appraisal value, cash to loan negotiable, G. I. loan 5¼%, \$25,995. TE 3-6157 after 6 p.m. A

RADIO, AM-FM & SW, table model, Metz, \$50; car cooler, 12-volt, \$15. DA 7-8615. A

CHEVROLET 6, 1954, stick shift, \$200; dining room set, 6-pc., maple, ladder back chairs, \$45. PL 4-4908. A

TV lounge chair & matching ottoman, \$85; Cadillac, 1959, convert., alpine white w/red leather interior, full power plus extras, \$3000. OS 6-7204. A

PIANO, Wurlitzer spinet, & bench, mahogany, \$350. DA 9-1215. A

REFRIGERATOR, Kelvinator, 8 or 9 ft., 10-yr-old, cross top freezer, \$60. OS 5-2075. A

## WANTED TO BUY

PIANO, condition not important. Box 1201. B

AQUARIUM, pump, filter, heater, 15 gal. or larger. OR 2-5306. B

SURFBOARD, 9'4"-9'7", foam, fiberglassed, in good condition. ST 4-6116. B

## FREE (to be given away)

FOX TERRIER, 1-yr-old, female, loves children. DA 6-5990. D

KITTENS, long hair, black & white, tweeds, large selection. OS 5-4371. D

KITTENS, 6-wks-old. OS 5-1967. D

## RENTALS OFFERED

APT., unfurn., 1-bdrm., redecorated, quiet, pleasant court-style, convenient to transportation, \$65. AX 2-1625 or AX 2-0808. E

APT., furn., 1-bdrm., close to Hawthorne \$80.50. PL 4-2347. E

APT., new, deluxe, all elec., w/built-ins, aarbae disposal, carpeted, drapes, covered aarbae, adults only, 20 min. from Norair in Torrance area, 2-bdrm., w/baths, \$145; 1-bdrm., w/sinale bath, unfurn., \$110. 371-6148. E

## RENTALS WANTED

BOARD & ROOM, college science student, Norcrafters son, 20-yr-old, in Lancaster for summer months, will be working 8 a.m. to 5 p.m. for Federal Government 754-4284 or Box 1202. F

## PERSONALS

WISH TO thank all our Northrop friends for their sympathy & understanding over the loss of our tiny son. The grief of our son's absence is consoled by your heartfelt kindness. SHIRLEY & BILL COLEMAN. I

WE WISH to express our sincere thanks to the Northrop Recreation Club & the many friends of "Mac" Drapeau of Dept. 5569 for the beautiful floral tributes & cards received during our recent bereavement. MRS. GRACE DRAPEAU. MR & MRS. HENRY DRAPEAU. MR & MRS. HAPPY VEITMAN. I

## FOR SALE OR TRADE

BOAT, 18' Fashion Craft, 40 hp elec. Scott eng., & trailer, passed Coast Guard inspection, extras, \$1295 or will trade for smaller boat. FR 9-1086. M

## NRC Good Time Table for June

For enrollment or information on activities listed below, call or contact Personnel Activities, Plant One, extension 2784. All Clubs meet at the NRC Clubhouse unless otherwise noted.

**ART CLUB, Stewart Luce**  
Meets Thursday, 7-10 p.m. at Joe Kalina's Studio, 3234 W. 157th St., Gardena. Now holding art course to Norair personnel.

**BALLROOM DANCE CLASS, Wayne Lee**  
Newcomers welcome to visit and enroll. Beginners—Every Thursday, 7 p.m. Advanced—Every Thursday, 8:30 p.m. New series—June 7, Eagles Hall, Hawthorne.

**BIBLE STUDY, C. J. McGuire**  
Plant 1—Daily, 11 to 11:45. Tool Design, Upstairs. Engineering Center—Daily, 12-12:45. Reliability Conference Room.

**BOWLING (Days) (Nights)**  
Corinne Davis Bill Myerson  
Summer leagues now rolling, entry forms at P.A. Substitutes needed.

**BOY SCOUTS, Bill Wareing**  
Sea Scouts meet alternate Tuesdays. Cub Scouts meet 4th Friday, 7:30 p.m. Boy Scouts meet Thursdays, 7:30 p.m. at Ramona School in Hawthorne.

**CAMERA CLUB, Howard Butler**  
Meets 4th Tuesday at 7:30 p.m. Lester Laucks, 17234 Eastwood Ave., Torrance. Movies program.

**CAMPING CLUB, Fred Armstrong**  
Meets 1st Wednesday, 7:30 p.m.

**CHESS CLUB**  
Meets 1st & 3rd Friday, 7:30 p.m.

**CHORUS (SYMPHONAIRES)**  
Meets every Tuesday, 7:30 p.m. Hawthorne High School, Bldg. 2, Room 4.

**GEM & MINERAL CLUB (days)**  
Dan Kozlow  
Meets 2nd Wednesday, 7:30 p.m. Club Social, June 16, 7:30 p.m.

**GEM & MINERAL (nights)**  
Doyle Shook  
Meets 1st Wednesday, 1 p.m. Location varies.

**GIRL SCOUTS, Dorothy Walls**  
Mariners, Tuesdays, 7 p.m., Naval Reserve Center, 201 W. 126th St., Hawthorne. Ages 13-18. Brownies, Thursdays, 3:30 p.m., Cabrillo School. Ages 9-12.

**GOLF (days)**  
Ken Clayton  
Tournament June 16, El Rivino. Starts 11 a.m. Cost: \$4. Entries open June 11.

**GOLF (nights)**  
League play at Western Ave.

**GUN CLUB, Dick Cade**  
Shoots Fridays, 5:30 p.m. to 9 p.m. North American Pistol Range, 5300 W. Imperial.

**KNITTING, Vera de Villiers**  
Meets Thursdays, 7:30 p.m. at 6203 W. 87th St., Los Angeles 45 (Westchester). Free instruction each meeting.

**MODEL RAILROAD, Jack Wilson**

**ORGAN CLUB, Gail Skinner**

**RADIO CLUB, Paul Serafin**

**RIDING CLUB, Joe Black**  
Trail Ride, June 10, 2:30 p.m. T & L Stables, No. River Ave. at Garvey, So. San Gabriel. Meeting June 24, 4 p.m.

**SEA ANGLERS**  
Meets 3rd Tuesday, 7:30 p.m. Charter boat "New Long Fin" June 23. Reservations at P.A., \$12 each.

**SKEET CLUB, Bob Bagby**  
Shoots at Rancho Angelus Gun Club, 19140 S. Main St., Gardena, alternate Saturdays, June 9, 23.

**SKIN DIVING CLUB, Chuck Roth**  
Meets 3rd Monday, 7:30 p.m.

**SOFTBALL, Joe Perez**  
Slow pitch, Tuesdays: regulation pitch, Wednesdays at Alondra Park.

**SOFTBALL (girls)**  
Betty Davey  
Team forming for Industrial league play. Practices Monday & Wednesday, Lennox Park, 6-7:30 p.m.

**SPORTS CAR CLUB, Paul Ankeny**  
Meets 2nd Monday, 7:30 p.m. June 11 meeting: color film of 1962 Indianapolis 500 Mile Race.

**SURF FISHING, John Pawlicki**  
Meets 1st Tuesday, 7:30 p.m. Field Meet June 16, Carlsbad 6-10 a.m.

**SQUARE DANCE CLUB**  
Dance every Friday, 8-11 p.m. Ralph Hill's Rancho, 15701 S. Crenshaw.

**SWIMMING**  
Every Monday, Tuesday, Wednesday & Thursday, 4:45-6:45 p.m. Opens June 18, Leuzinger High outdoor pool.

**TENNIS CLUB, John Potts**  
Free instruction, enroll now. Informal practice at El Camino on Saturdays. Industrial league play & ladder matches in progress. Women's ladder initiated in May.

**TOASTMASTERS #212, Walt Darby**  
Meets at Cockatoo Inn, Thursdays, 6:30.

**TOASTMASTERS #1398 (Nights)**  
Meets Thursdays, 12 noon, Gondolier, corner of Prairie & Imperial.

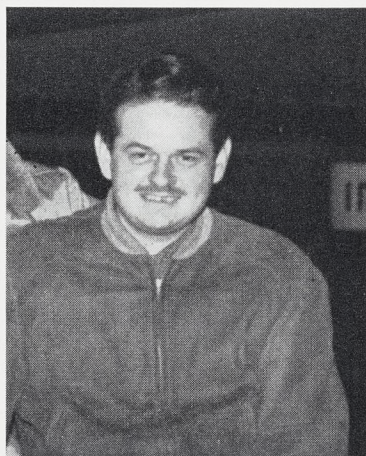
**TRAVEL CLUB, Howard Cornelius**  
Tours of year include: Seattle World's Fair, June 23-29; Catalina, Sept. 7-9; Orient, Nov. 3-25; Hawaii, Dec. 26-Jan. 1.

## INDY RACE FILM TO BE SHOWN BY CAR CLUB

A timely topic—Roger Ward's victory at Indianapolis.

The NRC Sports Car Club, Paul Ankeny, commissioner, has arranged to secure a first release, full length, 16-mm, color film production of the 1962 Indianapolis 500 Race.

The movie will be shown at the next meeting, NRC Clubhouse Annex, June 11. Program will start at 7:30 p.m.

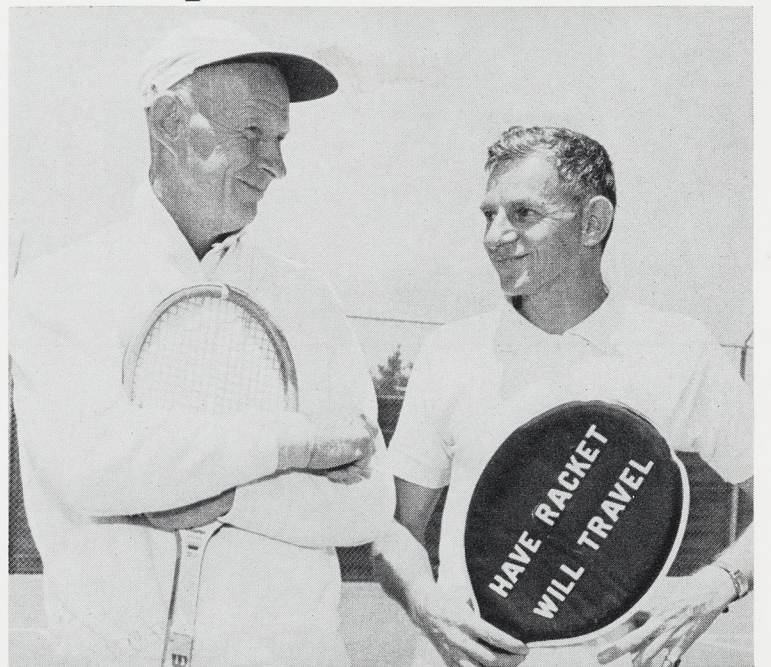


**STEWART LUCE**—Not John Kayser. In announcing NRC Art Club's free formal art instruction, photo of Stewart Luce was inadvertently substituted for photo of John Kayser. Stewart Luce is commissioner. All Norcrafters are invited to participate in the classes. Art Club meetings are held at Joe Kalina's Studio, 3234 West 157 Street, Gardena.



**JOHN KAYSER**—He is instructor in NRC's free art course.

## Bay Area Winner



**HAD RACKET, DID TRAVEL**—Norcrafters Bill Lurie went to the Bay area and won the 62nd annual California State senior net championship by defeating Bob Hill of Mill Valley, 6-3, 4-6, 6-4. He is shown here with Peninsula Tennis Club's second seeded Bob Shephard who defaulted prior to "show down" match due to leg cramps. Bill was top-seeded in the tournament. He is second in U.S.

## NRC SURF FISHING CLUB WILL TRY THE WATER AT CARLSBAD BEACH

The NRC Surf Fishing Club, John Pawlicki, commissioner, will meet at Carlsbad Beach next, it is announced.

## DANCE CLASS TO START JUNE 7, SWING, BRAHMS

A new series of dance classes will start tomorrow night, Thursday, June 7, it is announced by M. Wayne Lee, NRC Dance Club commissioner.

Location of the dance classes is Eagles Hall on Hawthorne Boulevard at 142 Street.

Beginners class gets under way at 7 and continues till 8:30. This will be in the western swing and the cha cha. An advanced class will start at 8:30 and continue till 10:30 p.m. This will be more western swing and Brahms tango.

The meeting will take place on June 16 from 6 to 10 a.m.

John asks that members register at Carlsbad with NRC representative on location.

Carlsbad Beach is 90 miles south on the San Diego Freeway. Driving time is about two and a half hours.

Signs will be posted to guide Club members to the scene of activity.

The Surf Fishing Club membership held their fifth annual workshop last night June 5 at the NRC Clubhouse Annex.

During the evening instruction was given in selection of new equipment, hook tying, bait, how to select and use fishing gear, proper casting, how to know good fishing locations, and overall method improvements.

**SPECIAL EVENT!**  
**JULY 14 DANCE**  
**AMBASSADOR HOTEL**  
**THREE BIG BANDS**





## First with Five Hundred



**FIVE HUNDRED**—Captain A. R. Baird, instructor pilot, Randolph Air Force Base, is the first man, Air Force or Company, to pass the 500-hour mark in the T-38. During the time he did not experience any type of flight emergency. Captain Baird's hometown is Independence, Missouri. He has over 3200 flight hours, all jet. Captain Baird started with the T-38 in Categories II and III at Edwards. He graduated from pilot training in 1955. Photo was Polaroid, sent by Tech Rep Hank Waklee.

## NEWS BRIEFS

**SECURITY PAYOFF**—Norair's continuing program to sharply reduce inventory of classified documents is realizing benefits, not only in precision control of information vital to the defense efforts, but in the cost factor as well, it is reported by Corporate Vice-president and Norair General Manager Dick Nolan . . . Norair policy is to (1) keep sensitive matter in all departments to an absolute minimum at all times, backed up by (2) a scheduled series of inventory checks and educational briefings by security personnel, and (3) immediate disposal of material not essential to operations . . . The cost reduction byproduct shows most vividly in reduction of clerical work and follow-up, in accountability files of Master Document Accountability Station (MDAS); in the 33 Area Document Accountability Centers (ADAC); and at the Norair Records Center inactive storage area. Space in locked filing equipment is freed. Mail handling and transportation is reduced and inventory simplified . . . Actual dollars saved in the current period although not completely recorded are very substantial, Mr. Nolan said.

**NINE MONTHS EARNINGS**—The board of directors, Northrop Corporation, has declared a quarterly dividend of 25 cents a share payable 23 June to stock of record 8 June, it is announced by Thomas V. Jones, president. Company earnings for the nine-month period ending 29 April were \$6,307,000 up from \$6,258,000 for the same period a year ago. Per share earnings at \$1.51 declined however from \$1.61 a year ago. Backlog is up to \$350,737,000 from \$258,000,000. Third quarter earnings were also up to \$2,337,000 from \$2,031,000 a year ago.

**NORTHROP QUALITY CONTROL**—Division Quality Control managers have initiated a far-reaching program designed to develop maximum potential in their field. Meeting at Norair Division with M. A. Peterson of the Corporate office were Division Quality Control officials R. S. Catlin, manager, Norair Quality Control; Robert Parsons, Nortronics-Hawthorne; Frank McNabb, Nortronics-Anaheim; Robert Young, Northrop-Ventura; Jack Young, Laminar Flow Control. Mr. Catlin was elected chairman of the new committee. Purpose of the committee is to assure maximum benefits from new developments created by each Division. The committee also acts as a group of consultants of the highest order and at immediate disposal, to aid in the solution of complex problems relevant to the control of quality. Highlights of the Norair agenda included a visit to the new Norair Numeric Metrology Center and a briefing on the capabilities of the Pratt & Whitney 4EA numeric measuring machine and the Clary computer. Dan O'Halloran, chief, Procurement, Tooling and Fabrication Inspection, with W. H. Conkling, Tooling Inspection supervisor, and J. K. Littler, linesman and mathematician of Tooling Inspection conducted the briefings. A presentation was made by Roy Wolford, Norair Quality Control Engineering, on combining environmental testing and fluoroscopy. A presentation was

(Continued on Page 2)

## REFERRAL AWARD REVISION—NORCRAFTERS CAN EARN \$200

### BENEFIT UPPED FOR KEY POSITIONS

Opportunities now wait for Norair and Northrop Space Laboratories personnel to earn an extra \$200 for referring certain Technical classifications to jobs at Norair and NSL, it has been announced by Industrial Relations and Security Director John B. Clark.

The Northrop Referral Award Plan has traditionally paid \$100 for referrals, and this continues. The selected classifications that merit the \$200 benefit are for key positions in the advancing technologies brought on by added activity in aircraft, missile and space projects.

The specific classifications are listed below.

In making the announcement Mr. Clark stated, "Our finest people and those who have been

here the longest, came to Norair because their friends and neighbors work here and say good things about us. 'Northrop is a good place to work' has for many years been a catch phrase in the industry. It has endured because it is true.

"It is with pleasure that management offers this additional incentive. New people sent in will be good people. They will help make our team just that much

stronger."

The new cash award was effective June 11 and applies to applications on or after this date.

The News, as a service to readers, prints a facsimile of the referral card in this issue which may be clipped and used in lieu of the regular card.

Regular cards are available in lobbies, Personnel offices and at other strategic locations throughout the plant.

## The Blue Angels



**BLUE ANGELS AND THE T-38**—U.S. Navy's aerobatic and precision flying team, the Blue Angels are photoed during series of evaluation flights in the Northrop T-38 supersonic trainer. From left, Navy Lieutenant Lew Chatham; Marine Corps Captain Doug McCaughey; Navy Lt. Commander and Blue Angel leader Ken Wallace; and Navy Lieutenant George Neale. The men, with exception of Captain McCaughey, took their flights with Norair Test Pilot Drury Wood. Captain McCaughey flew with A-F Pilot Capt. Hank Gordon. Flights were from Edwards.

## Leuzinger Swimming Dates Announced by NRC President

It's that time again. Starting Monday of next week, June 25, Norcrafter families have four days a week reserved for

their special pleasure at Leuzinger High School pool, it is announced by Dave Carney, NRC president.

The days are Monday, Tuesday, Wednesday, and Thursday. The hours are 4:45 to 6:45 p.m. and Mr. Carney reports it is all free.

The opening day was originally scheduled for Monday this week, June 18, but school authorities requested a week's delay in order that the pool be cleaned and painted before the summer season starts.

The Norcrafter exclusive use dates will continue through August 10.

There are but few restrictions. Bring a towel, women must wear swimming caps, and do not leave valuables in the lockers.

A lifeguard will always be in attendance.

## ENGINEERING REFERRALS CAN BRING \$200

Employment Referral Award is increased from \$100 to \$200 in the following engineering classifications:

- Engineer, Senior
- Engineering Project Administrator, Senior
- Engineering Reliability Coordinator, Senior
- Engineering Specialist
- Research Analyst, Senior
- Scientist, Senior
- Senior Technical Specialist
- Member of Senior Technical Staff
- Member of Technical Management

The \$100 Referral Award is still applicable to the following:

- Engineer
- Engineering Project Administrator
- Engineering Project Assistant
- Engineering Reliability Coordinator
- Research Analyst

## Course in Space Optics Headed By Dr. Satyendra

Northrop Space Laboratories scientists are engaged in key roles in the current two-week course on Space Optics being presented at UCLA, Sproul Hall, Westwood.

Heading the NSL participants as a principal lecturer is Dr. K. N. Satyendra, director, Space Defense Systems Technology and Analytical section. (See News Briefs for Dr. Satyendra's invitation to attend the NATO Paris meeting next month.)

The lecture series, being staged during the period June 18 through June 29, get under way each day at 8 a.m. and continue through

(Continued on Page 2)

## FREEDOM BOND 100 PERCENTERS

Norair organizations reporting 100 per cent Freedom Bond participation:

LFC Materiel, Norair Personnel—Plant One, Security, Industrial Relations, Personnel Activities, Mail Services—Plant One.

Group Insurance—Norair Plant One, Administration—office of the Manager, Blueprint Control, Major Assembly—Paint and Upholstery, Process Paint and Upholstery, Chem Mill—day shift, General Purchasing.

IS&E Materials, Warehousing, Traffic and Transportation, and BAC Fuselage Assembly—day night shift.



# Hammer House to People Heaters, Radiant Heat is the Coming Thing

Norair Manufacturing Research and Development, Barney Gaiennie, chief, has scored significantly in development and improvement of radiant heating equipment, particularly in prolongation of quartz lamp heating life and in the perfection of cooled ceramic holders.

The Norair radiant heating system has recently been offered to the public through licensing arrangements with Hi-Shear Cor-

nections. Further, the new ceramic holder brings extreme flexibility to infrared heat. It can be used in hand-held lamps or in massive honeycomb furnaces which generate the high and precision controlled heats necessary for large wing panels and other structural parts.

Lamp life has been increased from the present 100-hours-to-failure time to the full design life of 5000 hours.

sidewalks dry and warm at the same time.

Another use of infrared bids to help the nation's power companies achieve greater efficiency. The fact that it takes more heat to cool you than to heat you has brought this on. The steady growth of air conditioning in America has created the complex problem for power companies of using greater kilowatt loads in summer than in winter. More radiant heating in the winter will help balance this economic equation, say power officials.

Another growing field of application is in vending machines that offers both efficiency and health protection. Sandwiches and other perishables can be stocked in machines for extended periods of time in the quick-freeze condition. When you insert the coin the machine places the sandwich before an infrared lamp, and in less time than it takes to understand it, the sandwich is thawed and ready to eat still retaining its frozen fresh palatability.

## FOR POPCORN

A local manufacturer recently called on Manufacturing Research and Development seeking help to design an infrared system for popcorn poppers.

And the list of application continues to grow, say Manufacturing R&D researchers.

Hi-Shear Corporation located in Torrance, has their line of Norair infrared heating equipment both furnace and portable ready for the market.

The same is true of Electric Hotpack Company of Philadelphia with their retractable furnaces for hammer forming use.

In this application, the sheet is placed on the die under the hammer. The furnace extends, applies its precision controlled heat. When the required temperature is reached the lamps retract automatically and safely. Then the hammer falls. In this way the part is formed under the most ideal temperature ranges.

## Space Class

(Continued from Page 1)

until 5. Fee for the course is \$200. Prerequisites include a bachelor's degree in a physical science or engineering, or the equivalent.

Other NSL scientists taking part as principal lecturers are Dr. Gerald R. Izatt, Dr. B. L. Landrum, chief of Surveillance Research; and Dr. R. S. Estey, research scientist.

Associate lecturers from NSL include research staff men H. J. Wilcox, Vanja Srepel, and Dr. John Robe.

The course is intended to teach students, practicing engineers and space scientists to apply representative techniques from the broad range of technologies which constitute the field of space optics to problems of current interest. The presentation of subject matter will proceed through exposition of basic concepts to the solution of simple problems designed to teach basic approaches and techniques and finally to the application of these procedures to realistic problems drawn from current space programs.

## ... refer your friends

IN RECOGNITION OF THE COMPANY'S DESIRE TO HIRE EXPERIENCED APPLICANTS WHOSE QUALIFICATIONS ARE KNOWN TO ME, I WOULD LIKE TO RECOMMEND:

NAME \_\_\_\_\_ ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

(IF HE HAS A DEGREE PLEASE FURNISH THE FOLLOWING)

DEGREE IN \_\_\_\_\_ FROM \_\_\_\_\_ OBTAINED \_\_\_\_\_  
(College-University)

HE HAS HAD THE FOLLOWING EXPERIENCE \_\_\_\_\_

HE IS PRESENTLY WORKING AT \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

RECOMMENDED BY:

NAME \_\_\_\_\_ ORGN NO. \_\_\_\_\_ MAN NO. \_\_\_\_\_

EXTENSION NUMBER WHERE YOU MAY BE REACHED \_\_\_\_\_

REFERRAL AWARD: SHOULD THIS INDIVIDUAL QUALIFY UNDER THE NORAIR REFERRAL AWARD PLAN YOU WILL BE ENTITLED TO \$100 OR \$200 DEPENDING ON THE CLASSIFICATION.

## NORAIR DIVISION

NORTHROP CORPORATION

PERSONNEL ORGANIZATION—1242 NORAIR, 1001 EAST BROADWAY, HAWTHORNE, CALIF.  
ENGINEERING AND SCIENCE BUILDING AND  
MAIN PLANT EMPLOYMENT OFFICE



**PEOPLE HEATER—?** Researcher Bob Bridwell, Manufacturing R&D and his chief, Barney Gaiennie, with newly developed portable radiant heaters. Device is not a "people heater" but there are such.

poration under the trade name of LUX-THERM infrared heating equipment including lamps, lamp holders, and reflectors.

### HAMMER FORMING

Another firm, Electric Hotpack Company of Philadelphia, has been licensed to market Norair's retractable radiant heating equipment which is used primarily in hammer forming operations.

Division research and development in radiant heating processes has been brought to its present state of excellence through the efforts of Senior Research Engineer Bob Bridwell.

### NEW LAMP HOLDER

Heart of the development is in the air-cooled quartz lamp holder. It forms a snap-in unit which permits the quartz lamps and pigtail wiring to be removed for cleaning and unit maintenance. The cooling feature requiring only 1 CFM for a 4-lamp module practically eliminates a long-time trouble source of burnt out con-

Necessity being the "mother of invention" Norair infrared is used primarily in the Nortobraz process and in further development of stainless steel brazing of the triple Mach B-70 bomber panels. The advent of titanium in aerospace structures actually brought on initial development requirements. In hammer forming of this difficult metal, portable heaters were needed to bring the sheets quickly to temperature in place on the dies. A retractable radiant heater licensed to Hotpack now does this job.

Quartz lamp infrared heating now affects our daily lives and its influence is rapidly expanding.

Some specific applications:

### WARMER SHOPPER

Imagine, should you be a New Yorker, window shopping at your favorite department store on a snowy day. Instead of standing in slush and ice, infrared "people heaters" will heat the area to a balmy temperature and keep the



**BOB FITTON**—A referral award check.

## Portrait of a Referral Award

Bob Fitton, acting head, Aircraft Systems Analysis branch has received \$100 for referring Gerald Cox, his neighbor, friend and former coworker at another aerospace company.

Jerry is now a senior engineer in Operations Analysis.

Bob himself first came to Norair in December.

When asked specifically what he would do with his \$100, Bob said that he and his wife Virginia are in the process of furnishing their new home. "It will help buy furniture, I don't know what it will be. It could be part of a new refrigerator, divan, stove or what have you."

"Virginia thought it was a very good idea and suggested that I refer more friends to Norair. I am busy doing just this."

He continued, "Jerry and I worked together for eight years. I came here because a shift in

program emphasis made it appear that I might be assigned to projects other than manned aircraft. Norair's manned aircraft program looked tops to both of us. This added up to security, a good future, and doing what we want to do and are good at. This is the basic reason why we are both at Norair now.

"I like manned aircraft and so does Jerry."

Where is this new home that he and Virginia are furnishing? "In Palos Verdes," says Bob. "And every dollar helps."

In commenting on the revised award schedule where \$200 is now paid for selected classifications, Bob stated, "This will give Norcrafters twice the reason I had for referring friends to Norair. Not counting of course the biggest and most important reason—Northrop is a good place to work."

## NEWS BRIEFS

(Continued from Page 1)

also made by Ralph Sater, staff member on Norair's quality cost program.

**CROSS-COUNTRY**—The Air Training Command T-38 program has advanced to the point of extended cross-country training flights for student pilots. Frank Mathes, director, Customer Service, reports that on a recent mission 17 aircraft departed Webb Air Force Base for far point missions—all the way from the State of Washington to the State of Massachusetts.

**NASA**—Northrop Space Laboratories' Dr. K. N. Satyendra has been invited to present a paper before the Avionics Panel, Advisory group for Aeronautical Research and Development, NATO, by Dr. Hugh L. Dryden, deputy administrator, National Aeronautics and Space Administration and national delegate to AGARD. Dr. Satyendra has also been invited to attend the 12th General Assembly of AGARD in Paris which will immediately follow the Avionics session. The meetings will be at NATO Headquarters. Main technical theme will be "Manned Flight Systems—Past, Present, and Future". Title of Dr. Satyendra's paper will be "Detection of Satellites and Space Vehicles by Ultraviolet Visible and Infrared Radiation".

## AID AND NOR-AID SIGNUP AND DESIGNATION July 30 through August 10

See your organization clerk or your nearest  
Personnel Activities Office





## RIDES WANTED

7 a.m. — 3:45 p.m.

SEPULVEDA &amp; WASHINGTON BLVD., Culver City. H. L. Bennet, tie line 481 ext. 31. VE 7-4237.

## RIDES OFFERED

8 a.m. — 4:45 p.m.

MELROSE &amp; VAN NESS, Los Angeles Via Crenshaw Blvd. C. M. Spindel, ext. 2521. HO 5-8023.

PRAIRIE &amp; ARTESIA, Torrance. Linda Harris, ext. 2436. FR 1-8557.

PRAIRIE &amp; 176TH ST., Torrance. Mary Morrison, Ext. 1506, 371-8638.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

HOUSE, in Rollins Hills Estates, 3-bdrm., 2 baths, family room, 2 fireplaces, 1/2 acre lot, zoned for horses, 2 corrals. \$36,900. DA 6-5990.

TIRES, 4 General Super All-grip 7.50x16, 8-ply nylon, 18,000 mi.; spare, 1 6-ply commercial tread; plus 5 tubes & flaps; 5 commercial semi-drop center wheels, split rim, 6-lug nut, \$260 or will sell separately. PL 5-8040.

APTS., 12 1-bdrm., 3 1/2-vrs-old, near Imperial & Vermont, \$89,500, \$10,000 down terms. PL 6-3025.

IMPALA SPORT COUPE, 1961 V-8 Power-alide, r/h, power steer., extra clean, white. \$2500. NE 2-2642.

FREEZER, 21 cu. ft., \$100; bungalow house trailer, knotty pine interior, \$150. OS 5-5978.

STORE, Kenmore, dble. oven, \$30. FR 5-3149.

PLYMOUTH, 1957, white, 2-dr., push button transmission, excellent ena. & body, \$600. 676-6058 after 4:30 p.m. or weekends.

RIFLE, Remington 740-AL, semi-automatic, cal 30-06, cost \$157-95, \$90. Box 1301.

OLDS, 1954, power steering & brakes, r/h, new tires, good motor, \$335; house trailer, 14', 1953 Crown, sleeps 4, \$350; outboard ena., 7.5 hp, \$65. OR 1-1660.

HOUSEHOLD FURNISHINGS, bdrm. set, mahogany, spring & mattress, \$25; dining room set, 4 step padded chairs, Duncan-Phyfe, ext. drop leaf table, \$75. OS 5-2159.

UTILITY SKI-BOAT, 15', & trailer, w/40 hp Scott ena., \$525. OS 6-8816.

GAS STOVE, Wedgwood, chrome top, grille, glass oven door, broiler, auto, oven timer & clock, storage space, very clean, \$100. OS 5-9414.

MOTORCYCLE, 350 cc, Triumph, customized, has all standard equipment \$400. EX 1-4860.

## AD, RIDE FORMS

Going My Way and BBSF forms are available from Company stockrooms.

Going My Way is Form No. 59-228. BBSF is Form No. 59-308.

KITTENS, Siamese, blues & seals, pedigree papers available, \$10 & \$15. OS 5-1842.

BICYCLES, 2, boy's, 20" wheels, \$5; 10-spd. Rayleigh-Benelux, \$75; range-oven, 4-burner, apt. size, \$25. 421-2935.

HOUSE, custom, modern, 3-bdrm., 3 baths, plus family room, den w/wet bar, fireplace, carpets & drapes, all elec. kitchen w/built-in ref., dishwasher, range & oven, natural wood cabinets, oversize 2-car garage w/work bench & large storage area in southwest area, easy terms, \$28,900. DA 6-6493.

BICYCLES, 2 girl's, 26" w/baskets, \$18 & \$20. DA 3-4500.

HOUSEHOLD FURNISHINGS, washer & dryer, matching deluxe Norair, automatic, hide-a-bed couch, Rivera deluxe, sage green naugahyde, foam cushions 2-mos-old, \$180. DA 4-7843.

SHAMPOO TRAY, porcelain, pastel green chrome plumbing fittings, attachments included, cost \$80, \$25. OS 6-9989.

BOAT, 14' Glaspar 25 hp Johnson w/remote controls, large wheel trailer, \$525. DA 6-2453.

ACCORDION, Universal, 120-bass, 3 switch w/new carrying case, used approx. 3 months, \$125. OR 4-1847.

## TOLL CAMP NEXT FOR NRC CAMPER CLUB, JUNE 30

It will be Toll Camp in the San Bernardino Mountains next for the NRC Camping Club, it is announced by Fred Armstrong, commissioner.

The dates will be June 30 and July 1.

Toll Camp, a tree-shaded area with plenty of space for tents and trailers at no cost, is located eight miles north of Arrowhead Village on the North Shore Road.

There are stoves and tables. Piped water is also part of the facilities.

The desert and the sagebrush are not far away in case some club members find the tangy smell of pine needles overpowering.

There will be a potluck dinner served on Saturday evening and all are invited to take part.

Fred also states that the fishing equipment should be brought along as good fishing is reported in the area.

Nearest place for supplies is Cedar Glen or Blue Jay.

The Toll Camp campout will also serve as meeting location for June.

## FOR SALE

REFRIGERATORS, 3 Servels, Philco, \$10 each. OS 2-5578, after 5 p.m.

SCOOTER, 1951 Cushman, \$35. DA 9-4954 after 5 p.m.

WELDING OUTFIT, oxy-acety., \$125 spray gun & compressor, \$15; cannino jars, 7-doz., \$1.25 doz.; plastic pipe, 50-ft. ea., 1 1/4", 12' ft., 1 1/2", 17' ft.; Case tractor, disc, scraper, \$650; deep well jet pump, \$95; Masonite, 50' sheet. VE 7-4237.

TOP CAMPER, Sportsman, fits Chevrolet & GMC fender, side pick-up, 7.5' long, 6' 2" wide, 48" high, 6 windows, full rear door, \$250. OS 6-5219.

OUTBOARD ENGINE, Scott, 7.5 hp, never used, full gear shift, cost \$280, \$180. DU 4-4017.

MOVIE CAMERA, Revere 8-mm, \$25. FR 2-3827.

STUDEBAKER CHAMPION, 1954, w/over-drive, \$200. FR 1-2381.

HOUSE, 2-bdrm., large living room, double garage, fenced yard, 1 block to So. Bay Shopping Center, \$14,500, low down or \$14,350, G. I. FR 2-0952 or 370-2095.

CHEVROLET, 1956, gold & yellow Tudor, power steering, Poweralide, heater, w/w, original owner, \$600. FR 5-5139.

CHEVROLET, 1950, convertible, motor-overhauled, new brakes, good top, \$145. GL 4-7338.

BOAT, 16' Fleetwood Ambassador, remote control, 35-hp Mercury elec. motor w/generator, tiltable trailer, 4 life preservers, ski rope, \$750. OW 7-3328.

PARAKEETS, \$1 ea. OS 6-0041.

CADILLAC, 1959, convert., alpine white w/red leather interior, full power plus extras, \$2900; TV lounge chair & matching ottoman, \$85. OS 6-7204.

HOLLYWOOD TWIN BED, Barker Bros. box springs & mattress, \$20. CR 3-2194.

CORVETTE, 1958, h/top, 270 hp., 3-spd. posi-traction, 8,000 mi. on complete overhaul, radio, w/w, \$2150. OS 9-6982.

DINING ROOM TABLE, Formica, & 4 chairs, made by Davstrom, \$65. DA 5-2258.

RAMBLER American Super, 1959, r/h, cont. kit, 21,000 original miles, \$950. OR 2-5709.

## FREE (to be given away)

FREE DIRT. OS 6-5921.

KITTENS, 6-wks-old, OL 6-1175.

## RENTALS OFFERED

HOUSE, 2-bdrm., 1 bath, completely furn., w/large fenced backyard, will be available July 1, \$135 mo. DA 9-2556.

APT., bachelor, kitchenette, tiled bath, large closet, all utilities supplied, 4 short blocks to Northrop, \$15 a week. OS 6-1574.

APT., 1-bdrm., unfurn., redecorated, pleasant, court-style convenient to transportation, 7 miles to Norair, \$65. AX 2-1625 or AX 2-0808.

BACHELOR APT., w/3/4 bath, kitchen private entrance, utilities paid, close to Northrop, \$55 mo. OS 9-2771.

APT., 1-bdrm., near Manchester & Vermont, \$60. PL 8-6890.

## PERSONALS

LEAVING for Tulsa, Oklahoma via Amarillo, Oklahoma City, July 21. Will take 3 persons. Box 1302.

## Twisters Twist Rabble Rousers



**DOUBLE ELIMINATION CHAMPS**—Norair's Twisters twisted the Nortronics Rabble Rousers double elimination softball team organization for 11-7 victory to win preseason honors. From left, standing, Dave Carney, NRC president; Jim Martinez, Otis Thompson, Gordon Spekmyre, Dick Economy, Gary Bunn, Mike Sulentic, Bill Watson, Jim Schuessler, playing manager; and Joe Perez, NRC commissioner. From left, kneeling, John Heinz, Jerrel Stephans, C. G. Bernal, Bill Hunt, Chet Kennedy, and Bob Martinez. Not in photo Bill Lucas. Big season is now underway with regular pitch and slo pitch games being played at Alondra Park.

## For Your Dancing Pleasure



THIS IS THE PLACE—Ambassador will be the scene of NRC dance.

## DANCE DATE AT AMBASSADOR

NRC RESERVES THREE BALLROOMS, THREE BANDS

The Ambassador Hotel, out Wilshire way, will be the setting for an exclusive Northrop dance. Saturday night, July 14, it is announced by Dave Carney, NRC president.

The affair will get under way at 9 p.m. and continue through to 1:30 a.m. with three big bands

playing simultaneously in the big ballrooms reserved for the event. The ballrooms are the Sunset, Ambassador, and the Boulevard.

"No matter what your musical tastes are," says Mr. Carney, "there will be a band to satisfy your need."

There is a Latin group, a twist

group, and a Glenn Miller type for us old smoothies, all with vocalists.

The capacity of the three ballrooms is 2000 people and tickets will be limited to that number sold on the first come basis. Tickets can be purchased at Personnel Activities or from NRC officials. Cost is \$1.50.

Dress is semi-formal.

Spread the word and get your party ready, says Dave.

This promises to be one of the big NRC events of the year.

## NRC SKEET AND TRAP SHOOTERS IN CLEAN SWEEP AT CHATSWORTH RANGE

Northrop Recreation Club skeet and trap shooters covered themselves with glory last week with

skeet range.

The opposition was the North American Rocketdyne team.

The trophies won included team trophy, individual trophies, and top-gun trophy.

Northrop team consisted of Jesse Anglin, Bob Bagby, commissioner, Dick Cade, Jim Talmadge, and Ron Sears.

Highest score went to Jesse Anglin.

Roy Rogers was on hand to sign autographs.

a trophy clean sweep.

The event took place at Roy Rogers' Chatsworth trap and

## Freedom Bonds

Via Payroll Deduction

## Northrop-Norair News

VOL. 20 NO. 13

1001 E. Broadway, Hawthorne, Calif.

A NORTHROP CORPORATION

PUBLICATION

NORAIR DIVISION

Published every other Wednesday

CHARLES BRADFORD, Editor

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# Little Leaguers Start Season at Talon Field



**PLAY BALL AT TALON FIELD**—But first pause to render homage to Old Glory and sing our beloved national anthem the Star Spangled Banner. Opening day for Sportsman Little League brought out over 200 eager youngsters. The teams are already locked in combat for the national championship. Talon Field, fittingly named for Norair's supersonic T-38 trainer is located at 120th Street and Wilton Place, Hollypark.



**PRESSURE EASES**—The maze of pipelines and intricate valving systems for the air supply system of the Norair hypersonic wind tunnel are shown. Sixty air storage tanks store 2000 cubic feet of air at a pressure of 3200 pounds per square inch. The air is routed from the tanks to the main pipelines by a series of safety and control valves. Airflow through the tunnel is started by a fast acting hydraulically actuated valve (background of picture). The mist is created by the release of high pressure air during component and systems checkouts prior to operation.



**PRESENTATION**—Norcrafters Dave Carney, NRC president and John B. Clark, director, Industrial Relations and Security, present United States flag to Sportsman Little League President Gene Burt. Norcrafters active in little league season affairs include Bob Luxton, Maintenance; Ray Viverka, Engineering Test Lab; and Carl Lippon, Industrial Relations.



**CANADIAN SOURCES**—Northrop Materiel officials confer with Canadian government representative on implementation of Corporate policy on economic cooperation, a long-endorsed program of this Division. (Note T-38 fuel cell procurement.) Here T. John B. Robinson, Department of Defense Production, Canadian Commercial Corporation, visits Norair to brief on market potential. From left are C. R. Summers, purchasing agent, Northrop-Ventura; J. W. Hinchliffe, Corporate coordinator, Materiel Divisions; Carl Hood, Norair director, Materiel; F. M. Gibian, Norair Canadian procurement representative; Mr. Robinson; Jack Mannion, Norair manager, Manufacturing-Materiel department; and R. W. Ellis, purchasing agent, Nortronics ES&E. Out of photo, K. A. Grahn, general purchasing agent, Anaheim; R. G. Donnici, Norair buying supervisor, Specification Control and Equipment; and F. Rosenthal, Norair supervisor, Off-site Castings, Forgings, and Machine Parts.

## For a Flight in the T-38



**GENERAL BOYD RETURNS**—General Al Boyd, former commander, Edwards Air Force Base, now retired and vice-president of Westinghouse (Defense Products group) returns for a demonstration flight in the T-38A. Greeting the General is Major Jim Anthony, Northrop Deputy AFPR. General Boyd was on station at Edwards, 1949-52, during days of Flying Wing, F-89 Scorpion test programs.





## Referral Plan Brings Technical People

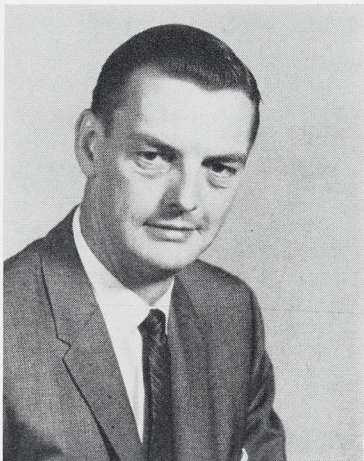
### Finance Department Forms New Business Systems Group

A Business Systems Engineering group has been consolidated in the Finance department, it has been announced by J. Grant Macdonnell, Norair treasurer. Keith Robinett has been named chief of this new group which comprises the Systems Engineering group formerly of Administrative Services with the Accounting Systems group in Accounting. The new group reports to the treasurer and will be responsible for all Norair internal business systems including the Integrated Management Systems program.

The formation of the integrated

group has a twofold purpose. First, by consolidating similar functions, a more efficient business systems organization results. Second, location of the group in Finance strengthens the abilities of the treasurer to carry out the financial control responsibilities of his line department.

Mr. Robinett brings to his new position over 11 years experience in business systems. A seven-year Northrop man, he supervised the systems group in Administrative Services for the past five years



KEITH ROBINETT

and has played a leading role in the development of Norair's Integrated Management Systems plan.

Mr. Robinett has his bachelor's degree in industrial engineering from USC where he is currently enrolled in the Graduate School of Business Administration.

Prior to joining Northrop, he was employed in systems and cost reduction work at Curtiss-Wright and General Electric and as a test engineering supervisor for General Electric.

The development and issuance  
(Continued on Page 2)

### PERSONNEL OFFICES START SATURDAY SCHEDULE, NIGHT INTERVIEWS ALSO BEING ARRANGED

Response to the increase in employment referral awards has been outstanding.

Division Personnel offices reported at presstime that last week's flow of highly skilled technical people seeking positions exceeds any other comparable period in recent years.

And this week promises to be even better, stated John B. Clark, director, Norair Industrial Relations and Security.

To help welcome and process newcomers, Technical Personnel offices have extended their business hours. Interviewers are now on duty until 6:30 p.m. each weekday. Also, the offices will be open on Saturdays from 9 to 4. A special night telephone service is now in effect. This will help those who find it difficult to get here during working hours, to make special interview appointments.

"If referred persons and other applicants find it impossible to come in on weekdays or Saturdays, Personnel will arrange evening appointments," Mr. Clark said.

The Division recently upped

referral award payments from \$100 to \$200 for certain technical classifications. The advice of this increase was carried in the last issue of the Norair News and by bulletins posted throughout the plants.

Mr. Clark emphasized the fact that Norair people in referring others for employment, should turn their completed cards in directly to Personnel. All that is required to insure eligibility for an award is the name, address, and telephone number of the person you are suggesting for work at Norair.

The increase was effective June 11 for all persons referred on or after that date.

The \$200 award is paid to Norair Division employees when they refer relatives, friends, neighbors for employment who qualify in the special technical classification now needed on new aircraft and missile projects. Persons referred are required to complete 90 days regular employment before the award check is given to the sponsor.

There is also a longstanding \$100 award given for technical classifications not covered by the higher figure.

The seven most needed abilities at present are scientist and senior scientist—for work at Northrop Space Laboratories; and for Norair, senior engineer, engineering specialist, and senior technical specialist.

Referral cards are available at many places throughout the plants, such as Personnel offices, lobbies, Science Center elevators, bulletin board locations.

Complete information on particulars of the awards can be obtained by calling the Technical

(Continued on Page 2)

### ENGINEERING REFERRALS CAN BRING \$200

Employment Referral Award is increased from \$100 to \$200 in the following engineering classifications:

Engineer, Senior  
Engineering Project Administrator, Senior  
Engineering Reliability Coordinator, Senior  
Engineering Specialist  
Research Analyst, Senior  
Scientist  
Scientist, Senior  
Senior Technical Specialist  
Member of Senior Technical Staff  
Member of Technical Management

The \$100 Referral Award is still applicable to the following:

Engineer  
Engineering Project Administrator  
Engineering Project Assistant  
Engineering Reliability Coordinator  
Research Analyst

### Jones Named To Pentagon Council

Thomas V. Jones, Northrop Corporation president, along with 20 other high-level American industrialists, has been appointed by the Pentagon to membership on the Defense Industry Advisory Council, it has been announced.

Deputy Defense Secretary Roswell Gilpatrick in commenting on the appointments stated that the accelerated pace of technology and the shortening of time for development and start of production have resulted in numerous changes in the Pentagon's methods of planning, budgeting, and contracting.

The Advisory Council will serve to expedite the interchange of information between contractors and the defense establishment.

Other appointees in the western area include E. C. Burkhardt, president, Genisco, Inc.; Ruben F. Mettler, president, Space Technology Laboratories, Inc.; Charles B. Thornton, chairman of the board, Litton Industries, Inc.; and William R. Allen, president, the Boeing Company, Seattle.

### Skybolt Guidance Successful

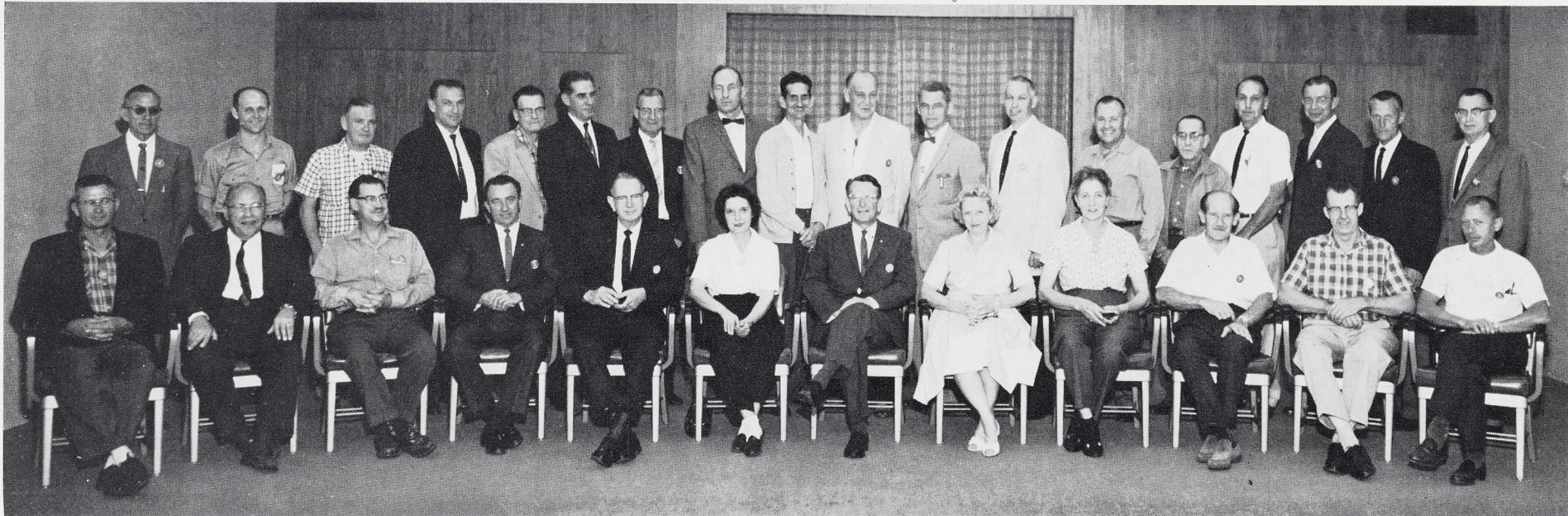
The Skybolt astronertial guidance system designed by Nortronics Division has been successfully demonstrated in flight, the Skybolt guidance project office has announced.

Flown in a C-131 aircraft, the Nortronics guidance package successfully demonstrated precision navigation using the system's operational configuration.

All elements of the guidance system were exercised. The C-131 flights are part of the guidance system flight test program which, together with rocket sled testing, readies the guidance package for complete weapon system operational test.

This Nortronics astronertial system is being developed and produced for Douglas Aircraft Company, Skybolt prime contractor, under direction of the Aeronautical System Division of the Air Force Systems Command.

### Diamond Pins



**TWENTY-YEAR PEOPLE**—Twenty-nine Norair 20-year folk are photoed with Corporate Vice-president and Norair General Manager Dick Nolan, center, during diamond studded pin presentation last week. Mr. Nolan, who is second on the Division seniority list, having gone

to work on August 28, 1939, extended his congratulations and gave optimistic report on Division state-of-affairs. Opportunity for new contracts and increased activity in both manned aircraft and missiles is excellent, he stated. For list of 20-year names see story Page 2.



## HIGHER AND FASTER EDUCATION NOW IN ORDER AT WILLIAMS AFB

(From the JET GAZETTE, Base newspaper, Williams Air Force Base—headline story, June 22.)

A new era in higher—and faster—education began today in Arizona.

City officials and civic leaders from the various communities in the Valley of the Sun, as well as members of the fourth estate, joined Williams AFB this afternoon in officially welcoming the first Northrop-built T-38s assigned to this base.

Visitors from the Valley of the Sun arrived at approximately 2 to 2:30 p.m. All spectators were urged to be in place at the reviewing stand by 2:45, at which time the activities were scheduled to start.

Three pilots from the 3525th Pilot Training Wing picked up the new T-38s at the factory in Palmdale, California and flew them to Williams.

Flying the T-38s on their maiden flight were Captain Charles Tribolet, Captain Gerald Puntey and First Lieutenant Vaynus Bradley.

The 380-mile flight, traveling at the aircraft's normal cruising speed of 580 miles per hour, took approximately 40 minutes.

First contact with the base tower was made at 2:45 when the flight leader made a position report over Blythe, California. By means of a tie-in with the communications equipment in the tower, the transmission was heard by the audience, as were all suc-

ceeding reports and signals.

Twelve minutes from the time of the first contact over Blythe, the aircraft were over Williams at approximately 40,000 feet. By looking to the west, the spectators were able to spot the planes' contrails.

Upon arrival, they made formation passes over the reviewing stands, followed by single maneuvers including a minimum-speed pass, a high-speed pass (but less than the speed of sound), a maximum-performance climb to 40,000 feet and a low-go, close-pattern landing.

Winding up the aerial demonstration was the regrouping, a formation pass, pitch-out and landing.

Colonel Richard S. Abbey, commander of the 3525th Pilot Training Wing, met and congratulated the pilots on their flight. He then verified the time log and officially accepted the aircraft for Williams AFB.

At present, there are 15 instructor pilots and two test pilots qualified in the T-38 on this base. Another group of 15 is scheduled to return from instructors school at Randolph AFB, Texas, while still another group has already started the up-grading school. Approximately 100 instructors will up-grade to T-38s by early 1963.

Following the arrival of the first of the new aircraft this month, the base is scheduled to receive 12 per month until a total of 83 is in place by January of next year.

Now in service at only two other bases in the Air Force (Randolph and Webb), the supersonic trainer has set world time-to-climb records for altitudes of 3000, 6000, 9000 and 12,000 meters.

### TRAVEL CLUB TO HOLD SPECIAL TOUR MEETING

Norair Cadabouts are advised that there will be a special meeting of the Travel Club to be held at the Alondra Club, 16411 South Prairie on Wednesday, July 18, it is announced by Howard Cornelius, commissioner.

Importance of the meeting is pointed up in that it will serve to launch concentrated effort in getting the two main trips of the year under way. Hawaii and the Orient.

November 3 is the scheduled departure date for the Orient tour which will be for 23 days. Tokyo, Nikko and Kyoto in Japan will be visited. The Club will call at Taipei in Formosa. In China it will be Hong Kong. In the Philippines, Manila, and Honolulu on the way home.

The price will be \$995 each including round trip jet transportation, all hotel accommodations, sightseeing, transfer of luggage, most tips and taxes with the service of an experienced tour manager included.

The Hawaii trip will get under way December 22. First stop will be Hilo and excursions to Kailua, Maui, and Waikiki will generate from there.

### DR. MIKUS TO DO RESEARCH FOR NORAIR

Dr. Ernie B. Mikus has joined the staff of the Material Sciences Laboratory as head of the Physical Metallurgy section, it has been announced by John Van Hamersveld, chief, Material Sciences and Value Engineering.



DOCTOR MIKUS

The Material Sciences Laboratory, Dr. R. L. Jones, supervisor, is engaged in support of Norair-funded research programs aimed at developing and extending the capabilities of the Division in the material field.

Dr. Mikus will direct programs in the area of super alloy and refractory alloy joining technology encompassing electron-beam welding, brazing, and diffusion bonding. Other programs are being initiated in the fields of high-temperature creep of high-strength sheet alloys for supersonic aircraft, and crack propagation characteristics of aerospace structural alloys.

## From Rapid City



**AULD LANG SYNE**—Rapid City's Northrop Management Club held their last meeting at the Arrowhead Country Club as Titan site activation project draws to a close. Guest speakers for the evening were South Dakota Lieutenant Governor Joe Bottum and Lt. Colonel Charles Tennant, longtime Northrop AFPR, presently SBAMA's Titan site detachment commander. Photo shows Norair Site Manager Max Fayweather discussing highlights of the project with Governor Bottum and Mrs. Fred Hertel. Mr. Hertel is Norair supervisor, Accounting branch at Rapid.



**COLONEL TENNANT**—Colonel Tennant praises Norair contribution to Titan installations at Rapid City. From left around the table are Mrs. Bill McMaster (Norair Field Engineering); Mr. Hertel, Mrs. Bottum, Ralph Branning, club vice-president and general supervisor, Field Engineering; Sandy Sandstrom, secretary of the Management Club and Facilities Engineering; Ralph's mother, Mrs. Enid Branning; Governor Bottum, Mrs. Hertel, and Mrs. Jack Cushman (general supervisor, Industrial Relations).

## Referral Awards

(Continued from Page 1)

Personnel office, extension 1893 or the main Personnel office in the Industrial Relations Building, extension 2412.

"Longtime Northrop personnel are the first to say that Norair is a good place to work", Mr. Clark said, "and in discussing prospective positions with your friends, it might be well to relate some of the benefits that accrue to our people."

"Ninety-six hours vacation after one year of service, plus a yearend holiday of 40 hours between Christmas and New Year no matter when the individual is hired. In addition, our 5 paid holidays account for 40 hours more, resulting in 176 hours total time off with pay or 4 weeks and 2 days a year."

"A generous retirement plan paid for entirely by the Company allowing the individual vesting rights at age 45 and after 10 years of continuous service."

"A Salaried Savings Plan whereby, after one year of service, the individual can participate in the plan up to 5 per cent of his salary with the Company contributing an additional 50 per cent to his individual account."

"A liberal group insurance program providing life insurance

and broad hospital, medical and surgical benefits for all personnel and their dependents."

"An Educational Refund Plan whereby the individual can continue his education and be reimbursed, or in special cases, pursue graduate study in his field up to 156 hours a year on Company time."

### TWENTY-NINE RECEIVE PINS DURING JUNE

Twenty-nine Northrop personnel turned 20 years service in June.

Their names and hiring dates:

Richard A. Ahrendts	.....6- 1-42
Elliott J. Cowdray	.....6- 1-42
Jack A. Medlock	.....6- 1-42
Vernon S. Pomeroy	.....6- 1-42
Woodrow M. Fletcher	.....6- 3-42
Inez P. Page	.....6- 3-42
Luther F. Parker	.....6- 3-42
Charles H. Schwilke	.....6- 4-42
Charles C. Bija	.....6- 5-42
Elmer E. Blecksmith	.....6- 5-42
Herbert L. Hubbard	.....6- 8-42
Julius Rastica	.....6- 8-42
Burton E. Smelser	.....6- 8-42
Morris C. Stull	.....6- 8-42
Cecil F. Van Deventer	.....6- 8-42
John E. Seymour	.....6- 9-42
Robert Lieber	.....6-11-42
Matthew A. Kinney	.....6-12-42
Jesse C. Roberts	.....6-13-42
Thomas G. Kennedy	.....6-15-42
Thomas A. Williams	.....6-15-42
James D. Matthews, Jr.	.....6-16-42
Carl G. Johnson	.....6-17-42
Allen O. Tennis	.....6-23-42
Tony Dickel	.....6-24-42
George C. Terry	.....6-25-42
Grace M. Newill	.....6-25-42
George E. Metzger	.....6-26-42
Zena M. Morris	.....6-29-42

## Finance

(Continued from Page 1)

of executive bulletins, organization charts, functional outlines, organization changes, Division announcements, and organizational directories will continue to be handled by Organization 1400, Byron Bonnett, director.

## Van Hamersveld Named to Science Panel Membership

J. A. Van Hamersveld, Norair chief, Material Sciences and Value Engineering, has been invited by the National Academy of Sciences, Materials Advisory Board to become a member of the Aerospace Applications Requirements Panel.

The invitation was extended by Robert W. Crozier, executive director of the Board.

Mr. Van Hamersveld's first meeting took place June 28 and 29 in Washington, D.C.

The objective of the applications panel is to provide perspective and guidance for the Materials Advisory Board and other scientific committee activities so that upcoming manufacturing methods development can be knowledgeably based on long-range aerospace vehicle and weapon systems requirements. In addition, guidance will be given to the Department of Defense review committees in the areas of design criteria, materials system research, and manufacturing

process developments.

Objectives will be carried out by establishing and analyzing future mission and system requirements with respect to (1) design criteria, application and environment; (2) determining and outlining the major areas of materials development and needs.

An immediate overall goal of the Materials Advisory Board is revision and updating of already published reports on applications of materials, particularly in areas that have enjoyed unusual scientific progress since original documents were written.

**Northrop-Norair News**

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A NORTHROP CORPORATION  
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NORAIR DIVISION  
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CHARLES BRADFORD, Editor

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## RIDES WANTED

7 a.m. — 3:45 p.m.

SILVER SPUR & PALOS VERDES DR. N. Palos Verdes. Bill Wallen, FR 8-1732. 2  
STUDEBAKER & ALONDRAL, Norwalk. Paul Henry, ext. 2200, 864-4638. 2  
ROSECRANS & WILMINGTON AVE., Compton. Angel Avalos, ext. 2054, NE 8-4982. 2

7:30 a.m. — 4:15 p.m.

HAWTHORNE BLVD. & LENNOX BLVD., Lennox. Carol Taylor, ext. 1708 2418. OR 2-1881. 3

## RIDES OFFERED

7:30 a.m. — 4:15 p.m.

WESTERN & 9TH, San Pedro. F. G. Nicolay, ext. 214, TE 1-5158. 13

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

HOUSE, 3-bdrm., 2-bath, double garage, patio, w/w carpeting, drapes, built-ins, located in Hollywood Riviera, \$26,900. FR 8-2060. A

PLYMOUTH, 1950, good condition, \$150; Oldsmobile, 1954, 4-dr., new tires, p/steering & brakes, \$325; outboard motor, Elgin, 7.5 hp, \$65. Box 1401. A

ARM SAW, Comet Radial, extra blades, \$125; propane tank w/regulator for camper or trailer, \$10; rollaway chest & tool chest, \$25; wooden telephone, old style, \$5; overloads, 1 set for pickup, \$10; corner table, blonde, \$10. WA 5-3166. A

HOME, Grandview Palos Verdes, 3-bdrm. & paneled fam. rm., 1 1/4 baths, fireplace, lae. corner, completely landscaped. 3-yrs.-old. \$31,500. FR 7-1244. A

PLYMOUTH, 1956, 2-dr., r/h, ena. excellent, clean throughout, reverse gear in auto. transmission not working. \$400 as is, or \$450 fixed. FR 9-0659. A

BUNK BEDS, 2, Salem maple, w/o mattresses. \$15. OR 1-3373. A

DINING TABLE & chairs, hard rock cherry maple. \$40. PL 4-4908. A

CADILLAC, 1959 convert., white w/red leather interior, full power plus extras, \$3000; TV lounge chair & ottoman, nau-aahyde. 2-mos.-old. \$75. DA 4-1688. A

BOAT, 19' inboard, Coast Guard approved, all extra gear, fish finder, tandem wheel trailer, \$950; gas welding outfit, cutting & welding torches, tips, hose, gauges & cart. \$85. 676-2435. A

RACING SLICKS, Inglewood, 800-14, 1 pr., used once, \$50; iia saw, table model Craftsman. \$15. TO 7-3846. A

FORD, 1/2-ton pickup, 1942, r/h, good tires, body in very good condition. \$175. NE 9-7327. A

BOAT, unfinished 16' Fleetcraft cabin cruiser, glassed hull & decks, w/ trailer. \$315. HA 5-5198. A

## AD, RIDE FORMS

Going My Way and BBSF forms are available from Company stockrooms.

Going My Way is Form No. 59-228, BBSF is Form No. 59-308.

NYLON ROPE, 7/16", 10¢ a foot in 100' lengths or more; books, Zane Grey, set of 53. \$75. OR 7-6224. A

HOUSE, GI resale in Norwalk, 2-yrs.-old, 4-bdrm., 1 1/4-baths, 18'x24' living room, carpets & drapes, block wall, separate laundry room, wired 220, washer & dryer space, built-ins plus hardwood floors, forced air heat, lath & plaster. \$19,950. UN 5-1779. A

CHAIRS, 2 Danish modern, walnut, green & blue fabric, foam rubber cushions, cost \$150, \$35 ea. DA 3-7969. A

SWING & SLIDE SET, \$20; wagon, \$2; tricycle. \$2. OS 5-7088. A

RIFLE, Winchester model 70, 308, bolt action, 4x scope, pearl inlaid stock. \$345 value. \$200. TE 4-5561. A

STUDEBAKER, 1954, 2-dr. sedan, runs very good & good transportation, \$175. 671-3824. A

HOUSEHOLD FURNISHINGS, washing machine, Whirlpool agitator, \$55; poker table, \$25; typewriter, Remington, table model, \$20; dining room set, \$150; bdrm. set, twin beds, \$100; living room set, \$75. 275-3698 after 6 p.m. A

## FOR SALE

TOY TERRIER, 3-yrs.-old, male, white w/perfect markings, \$15. UN 8-9394 after 5 p.m. A

TAPE RECORDER Wilcox-Gay, complete w/microphone & several reels of tape, \$25. 676-8457. A

DRAFTING MACHINE, Brunina, & 18" clear plastic scale, 1-yr.-old, \$90. OR 2-7810. A

GAS RANGE, O'Keefe & Merritt, good working condition, \$20. OS 5-8988. A

PONTIAC, 1956 Starchief, r/h, 4-dr., h/top, r/h, dual range hydro. w/park position, engine completely o/hauled. \$675; bedrm. set, hardwood, \$20. OS 5-2159. A

BOAT, 17' inboard Chris Craft, rebuilt engine, trailer, \$900; baby furniture, Babyline bed & mattress, \$25; wardrobe chest, \$25; boogie board, \$10. 672-7002. A

ENGINE, 1953 Chrysler, complete, \$75. ST 4-7989. A

PLYMOUTH, sedan, 1948, needs light work, good transportation car, \$35. OS 5-7969. A

OUTBOARD MOTOR, Mercury Mark 28, w/tank & remote control, \$225. OS 6-3448. A

BOAT, 14' outboard, w/15 hp motor \$135; bicycles, boys', 24", 2-shift, \$15 26". \$10. OR 7-2828. A

HOUSEHOLD FURNISHINGS, dresser & nightstand, blond, \$25; stove, table-top type, operable condition, white, \$25; breakfast set, chrome yellow plastic, chairs need upholstering, cost \$200. \$25; refrigerators, 1 Philco, 2 Servels, good operable condition, \$50 ea.; box springs & mattresses, Beauty Rest, 2 sets w/iron frames, \$50 ea.; mixer, Sunbeam, w/2 mixing bowls, \$20; lawnmower, rotary-type, Briggs & Stratton, 3-yrs.-old, \$25. OR 2-5578 after 5 p.m. A

MOVIE CAMERA, De Jur, 8mm, w/standard & telephoto lens, lens filters & leather case, \$55; 4-light bar, 3 bulbs, Mayfair, \$10; splicer & editor, Mansfield, \$10; reel magazine for 12 400' reels, includes 6 reels & cans, \$10. DA 4-7254. A

SEWING MACHINE, Necchi Mirella, portable, cost \$175, \$100. TE 5-7655. A

CADILLAC, Coupe De Ville 1953, full power, cont. kit, good condition, \$425 398-9874. A

TV, Tele-tone, 17", continuous tuner, \$20; TV, Admiral, 17", \$40; Ford V-8, 1952, convt., r/h, Fordomatic, w/w, good top, rebuilt trans. & ena., elec. fuel pump, \$200; Chevrolet, h/top, V-8, 1955, r/h, w/w, Powerglide, \$500. FR 8-4429. A

SKIN DIVING TANK, U.S. Divers, yellow enamel, plastic lined, reserve, excellent condition, used only in fresh water, \$40. OR 1-2109. A

CABIN CRUISER, Seafair, Glasspar, 17 1/2', Evinrude 50 hp motor, Sun Valley trailer, full canvas cover, many accessories. \$1595. FR 7-1074. A

REFRIGERATOR 9 or 10' Frigidaire, good condition, \$50. OS 6-7820. A

RINK SKATES, Hyde white shoes, size 4 1/2 to 5 1/2, toe stops, \$10; diving suit, wet, size 9, 11 years, 2-pc. & hood, \$10. DA 6-7232. A

FORD, 1952, transportation car, \$100, 428-1772 after 7 p.m. A

STUDEBAKER CHAMPION, 1953, automatic shift, 4-dr., good transportation. \$195. DA 3-7349. A

WASHING MACHINE, Bendix tumbler-type, \$35. FR 9-2068 after 5 p.m. A

FORD, 1957, convt., T-Bird engine, auto. transmission, power equipment, tonneau cover. \$800. 329-3949 after 6 p.m. A

HOUSEHOLD FURNISHINGS, dinette set, modern, 4-place, \$45; student lamps, 2 brass, \$4; bookcase headboard, maple, w/frame, \$9; aum rack new, maple, \$3; table radio, RCA, maple, \$10; gas range, 42" Kenmore, \$25; love seat, maple, \$35; twin beds, w/matching step chests, maple, \$50 ea.; Ford fender skirt 1955. \$3 OS 6-5453. A

## WANTED TO BUY

WHEELCHAIR, w/extensions for legs, good condition. OR 7-8775. B

DRAFTING MACHINE & SCALES, OR 2-8376. B

SEWING MACHINE, console; table saw 10"; bicycle, 26" lightweight. OS 9-6765. B

## FREE (to be given away)

KITTEN, Sealpoint Siamese, 5-mos.-old female, beautifully marked, EX 1-2428. B

## RENTALS OFFERED

GARAGE APT., 3 rooms, nicely furnished, utilities paid, quiet neighborhood ideal for responsible working couple in Gardena. \$90 mo. Box 1402. E

APT., 1-bdrm., No. Inglewood area, carpets, drapes, built-in stove, adults only. \$99 50 mo. OR 7-3786. E

APT., large, deluxe, 1-bdrm., unfurn., disposal, car port. \$75 mo. OS 5-9695. E

APT., 2-bdrm., second floor, near shopping center & Northrop, aargae and utilities included. \$125 mo. OR 2-4998. E

APT., 1-bdrm., unfurn., redecorated throughout, convenient transportation & shopping. 7 miles to Northrop, aargae avail. \$65 mo. AX 2-1625 or AX 2-0808. E

APT., 1-bdrm., unfurn., \$75 mo. OS 9-1291 after 4:30 p.m. E



## BOB MARSH WINS AT EL RIVINO WITH A 74

Golf scores from El Rivino are now in and counted and with NRC tourney winner in the overall low gross going to Bob Marsh with a 74.

Overall low net was a tie won by Mike Craig and Bruce Planck each with a 67.

First flight which contained 20 entries was also a tie going to Charlie George and Myron Baker with 70.



**BLACK LACE** — Juanita Crowley sings those fiery Latin numbers that make you go go.

## RENTALS OFFERED

APTS., 8 new deluxe singles, w/w carpets, drapes, built-ins, aargae disposal, patio, sound insulated, utilities paid, near Northrop, \$85 mo. OS 6-5681. E

APT., furn., large 1-bdrm., ocean view, beam ceiling, disposal, utilities, near bus line. \$125 mo. FR 4-2357 between 5 & 7 p.m. E

HOUSE, in Hawthorne, 2-bdrm., 2-car garage detached, fenced yard, available approx. July 10, small children OK, approx. 1 1/2 miles to Plant One, walking distance to bus & shopping center. \$125 mo. OS 5-6377. E

APTS., new, 2-bdrm., 2-bath, studio-type, 1 1-bdrm., 1 3-room, built-ins, carpeting drapes, w/laundry facilities, near Catholic Church in Hawthorne, \$90 & \$125 mo. OR 7-0847. E

## CHILD CARE WANTED

CHILD CARE WANTED for 1 or 2 children, days, near Northrop, reasonable. 676-2532. H

## PERSONALS

RIDE WANTED to Seattle or Portland on or about July 21 for 2 persons. Share expenses & drive. OS 9-2122. L

SINCEREST THANKS for all the expressions of sympathy when our mother passed away recently. We shall long remember your acts of kindness. MILLIE MERRILL & INA MAE MERRILL. L

## FOR SALE OR TRADE

PLYMOUTH STATION WAGON, 1960, excellent condition, \$1650 on easy terms or will consider smaller car as trade-in. TR 7-7967. M

## Midsummer Dance

**THE SCENE**—One of the three ballrooms that has been reserved at the Ambassador Hotel by the Northrop Recreation Club for the Division's Midsummer Dance date next Saturday, July 14. This happens to be the Ambassador room. The other ballrooms are the Sunset and the Boulevard rooms. Each ballroom will have its own band—a Latin group, a twist group and a Glenn Miller type for Norair smoothies. Capacity is 2000 people. Cost is \$1.55 each. Dress is semi-formal. Tickets can be purchased from Personnel Activities or from NRC officials. The dance gets under way at 9 p.m. and continues through 1:30 a.m.

## The Life You Save May be Your Own—Be a Blood Donor

Be an unsung hero. Be a blood donor.

Personnel Activities announces that the next visit of the Red Cross bloodmobile to Norair Division will be held Wednesday, August 22 and the hero bit is very real and one usually qualifies by helping to save lives of others.

Heroes are made in many ways. Some dash into burning buildings and rescue a sleeping child. Others dive into frigid waters to save a drowning person but there is quite an easier way, states Personnel Activities.

You can save a life by giving blood and the life you save could very possibly be a member of your family or a person you have worked with at Norair for many years. The life even could be your own.

The need for blood in the Norair blood bank is an urgent one.

The account should be in balance at all times.

The bloodmobile will be parked at the Product Display Building

between the hours of 7:30 a.m. and 1:30 p.m.

This date is six weeks away which gives ample time to make arrangements to become donors and these arrangements are minimum.

All persons who intend to participate are asked to contact their organization clerk or the Personnel Activities staff for appointment and transportation information.

Donor requirements:

Age—21 to 60 years. Minors must have written consent from one parent or legal guardian.

Donors must weigh at least 110 pounds.

There must be an interval of 12 weeks between donations.

Eat regular meals prior to becoming a donor but avoid excessive fatty foods.

For the donor's protection an adequate examination including temperature, pulse, blood pressure, hemoglobin determination is given prior to a blood donation.

## NRC SEA JAUNT FOR ALBACORE SET FOR JULY 15

The NRC fishing season is off to what promises to be one of its best years as State Divisional Fish and Game officials report the imminent approach of albacore schools.

A charter just for albacore has been organized for July 15, a Sunday. This is a first come, first served affair and all Norair fishermen who have tackle that measures up to this greatest sea fighter, pound-per-pound, are asked to secure their tickets at Personnel Activities.

Price is \$15. Departure time will be 12 midnight. The boat is the Sharpshooter. Skipper is Frank Hall.



**SWEET SINGER**—Niki Stevens in the Boulevard sings about moods, moonlight.



# Thorleif Normann, Norair Sign Man, Bids for the Exotic Fowl

Born beyond the Arctic Circle. An ex-boxer who knocked out a man who was to become a United States senator. A renowned painter of landscapes at 12 years of age. A man who is devoting 20 hobby years to reglamourization of the chicken business.

This is our Norcrafter human interest story.

His name is Thorleif "Clover" Normann, Norair sign painter.

"Forget the 'Clover'," says this lean, sinewy, 23-year man. "I raised race horses for eight years as a semi-commercial hobby. Closest any of my thoroughbreds ever got to the money was sixth. I watched them run at 103-1 odds. I woke up one morning, thought it over and decided I'd had it. After that I stuck to real estate, building houses, and breeding color into a new breed of chicken."

## MAN FROM NARVIK

Thorleif was born in Norway near Narvik, the far north port of World War II fame. He emigrated to this country with his sister and parents at the age of

Thorleif's employment number at Norair is 891. (For significance, look at your own.) His first job—painting signs.

"It is a wonderful occupation," said Thorleif. "It is creative. And there is a lot to it. Before you can be a good sign painter, you must have learned the techniques and forgotten that you learned them. This is the time when you develop your style. Every pro has his style. Every sign painter paints his signature right into the letters. You can tell one painter's work from another as far as you can see it."

## THE BIGGEST

"The biggest sign job at Northrop? A banner for the news services when the Flying Wing took off. It was 200 feet long and 10 feet high. The smallest? Some trophy inscriptions."

Thorleif's work, performed in his small shop tucked away at the edge of the flight field, includes Norair signs of all kinds and descriptions, silk screen work, posters, brochure work, banners, nameplates. Even some

enough painting on the job.

He loves real estate. Has a ranch in Bouquet Canyon. But is sad about two deals that were never consummated.

Right after the war he and a group of Norcrafters were about to buy 40,000 acres of Nevada land near Ruby Lake. Price, 17 cents an acre!

## DECISIONS, DECISIONS

"We just couldn't make up our minds," said Thorleif. "It is selling now for as high as \$1100 an acre. Oh well."

A similar thing happened on a deal near Fallbrook. "The man wanted \$25 down on 520 acres, total price \$2000. I told him I'd give him the money the next morning. That night the man's sister-in-law bought it for \$50 down. Today that land is worth \$10,000. Oh well, again."

"This is what I mean about clover."

Thorleif's greatest interest, however, has to do with a very rare hobby.

He wants to put glamour back into the chicken business. He has allotted 20 years to perfect a new breed of fowl.

## CHICKEN GLAMOUR

"And the most important feature of this program is color," he says. "These will be chickens for the fancier. The roosters will be beauties. Instead of painting chickens on canvas, I am using what I know about colors to start a new breed of chickens. I think I will call them Golden Bouquet. This is because they will look like a living bouquet of flowers. Hackles and saddle will be golden. Duck wing, barred with red, brown, black and white. Tail sickles will be black with white lacing. I raise 200 a year. The selective up-breeding eliminates all but 30. It keeps going this way until you have your strain stabilized."

"You have to keep records on every chicken. If the colors trend the wrong way or begin to fade from father to son to grandson, you have to be able to prove why and know how far back to go to eliminate what is wrong and get your selective processes on the track again."

"Finally, your breed must be accepted by the directors of the Poultry Breeders Association. This is a severe test. It includes health, worthiness, appearance, even personality."

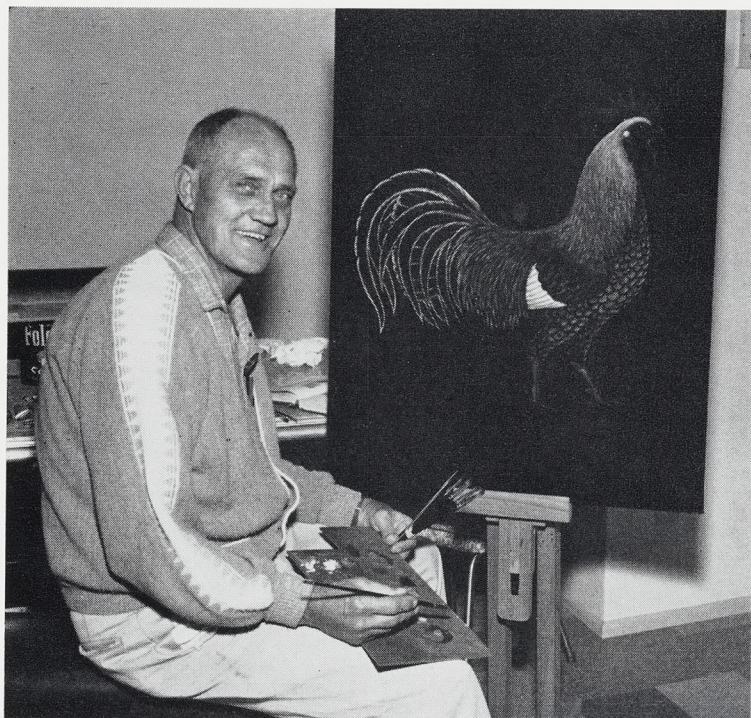
Raising chickens is a lot different than raising race horses.

## SOMEBODY KNOWS

"If a chicken fails to measure up, at least you get a good dinner for your trouble. With a horse? A pot of glue, I guess."

Take out the race horses, take out the 40,000 acres in Nevada. Add knocking out Senator Ball, add being a logger, a landscape artist, a creative sign painter who thrives on pressure, building four houses, and more on the way. Add also a ranch in Bouquet Canyon, the proud Golden Bouquets, good health, tireless drive, and comfortable retirement only five years hence, and a lot of Norcrafters are going to want to debate Thorleif on the clover bit—and he would go along.

"Somebody up there knows what is best for us," he says.



**THE CONCEPT**—Thorleif details exact colors of the Golden Bouquet chicken. Painting is on velvet. Photo was taken in studio of his do-it-yourself house.

two. They settled where all good Norse folk settle, in Minnesota. The town was Crookston.

If ever a man showed promise for his life work early, Thorleif is that man. At the age of 12, he turned out oil and watercolor scapes of the "land of sky blue water" in such excellence, that people came from far and wide to Crookston just to see.

"It was easy," said Thorleif. "My work was never a problem. I became an itinerant sign painter, going from town to town. There were plenty of signs to paint, barber shops, meat markets, hardware stores, restaurants."

Thorleif also did some logging and "ham and egg" boxing. "Smoker stands."

## JOE BALL KAYO

Most outstanding in his memory of this period is the time he knocked out a young fighter named Joe Ball. Joe Ball later became Senator Ball from Minnesota. Another Ball, brother Bob, was a guard force Norcrafter during the war. He is a Blue Chip Stamp representative now.

clay modeling.

"I can do linoleum blocks too," he said.

Thorleif is five years from retirement.

In answer to a question on how he keeps in such good shape, he said, "Work. And more work. On the job and off the job. Most of my assignments at Norair are crash programs because sign wording has to be the last decision in planning big symposiums, customer visits, and similar functions. You come to work, get your brushes going and the next thing you know the day is over."

## SCIENCE OF GENETICS

"Then you go home and you have important things to take care of there. You can strike a lick on a carpentry job. I love carpentry. Or my chickens. This is a real science, Genetics."

Thorleif's hobbies have indeed taken him far and wide. He has built four houses. "Did everything," he stated. "From design to frame to finish including plumbing, wiring, masonry, cabinets. Everything that is but, you guessed it, painting." He gets

## Junior Achievers



**TEAM HONORS**—Norair Junior Achievement advisors receive JA citations plus plaque awards from the Management Club for their program in advising teenagers in practical phases of industry. Presenting citations received in behalf of management is O. P. Omley, director, Production Operations. Junior achievers are Jack Miller, a three-year advisor, and two-year advisors, Mose DeMasters, Don Miller, and Joe Druliner. Tom Brazil is Management Club coordinator for JA activities.



**READY AND WAITING**—First student to solo in Webb's new 63-C class is First Lieutenant Richard B. Heinisch, right. His instructor, Captain Mario J. Stefanelli at left extends congratulations. Lieutenant Heinisch was ready to solo long before his required 12:30 hours were completed. He made excellent landings from the very beginning, states Norair Tech Rep Al Eldridge. His solo time was 13 hours and 5 minutes.



**DEVELOPMENT**—This rooster approaches color scheme. Selective breeding will clear up colors in wing feathers, tail sickles. Thorleif estimates six more years to perfection.



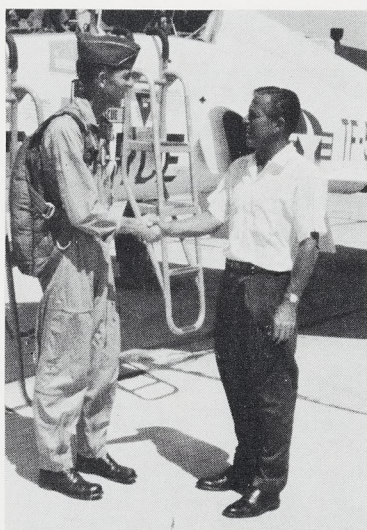


## NORTHROP NORAIR

## NEWS BRIEFS

**PUBLIC RELATIONS**—Northrop Corporate Public Relations and Advertising team headed by Norman Warren, director, following a policy of holding staff meetings on Division home grounds, met at Norair last week. The group was greeted by Corporate Vice-president and Norair General Manager Dick Nolan who discussed the overall direction of Norair and its Corporate relationship. A briefing on capabilities, products and projects was presented by Milt Kuska, deputy assistant general manager, Technical. Tom McCarthy, manager, Administration department, and Paul Crews, assistant director, Industrial Relations and Security, talked on Division industrial relations areas and outlined particulars of the growing need for highly skilled technical personnel. Purpose of the on-location corporate meetings is to assure all public relations and advertising personnel firsthand knowledge of operational phases throughout the divisions.

**T-38 MILESTONE**—The hours count up on the T-38. During week ending 30 June, both Randolph and Webb Air Force Bases passed the 10,000th flying hour in the supersonic trainer. At Randolph, Captain F. E. Jackson, T-38 maintenance officer, formerly flight test maintenance officer from Cat. II and Cat. III, was in the cockpit. Captain Jackson who was commissioned in 1950 has 4000 hours, 415 in the T-38. At Webb, the 10,000th hour was reached by Second Lieutenant Wm. D. Flint. It happened as Lt. Flint made his first solo!



... Captain Jackson and Hank Waklee shake hands at 10,000 hours.

## Roy P. Jackson Appointed Vice-President for NSL

Roy P. Jackson has been named vice-president and assistant general manager of Northrop Space Laboratories, it has been



ROY P. JACKSON

announced by Richard E. Horner, Corporate senior vice-president, Technical, and vice-president and general manager, Northrop Space Laboratories. Mr. Jackson assumed his duties on July 16.

Mr. Jackson, with more than 20 years experience in the design and development of high per-

formance airplanes and missile systems, was most recently the assistant general operations manager of Aeronutronic Space Systems Operations.

Mr. Jackson rejoins Northrop after an absence of nearly five years. During his first tenure, he rose in responsibility from chief of Fluid Dynamics to chief engineer. He left Northrop to become systems engineering manager of the Denver Division of The Martin Company.

Prior to joining Northrop in 1953, Mr. Jackson was a member of the engineering staff of North American Aviation, where he directed preliminary design and development of many advanced airplanes, including the USAF F-86, F-100, and the Navy SN2J and FJ.

Shortly after receiving his degree in mechanical engineering (with distinction) from Stanford University in 1941, Mr. Jackson joined the Ames Aeronautical Laboratory of NACA (now NASA), where he remained for five years.

## Freedom Bonds

By Payroll Deduction

# AID, Nor-Aid Goal Set at 12 Minutes Pay Each Week

AID and Nor-Aid signup dates for this year are set for July 30 through August 10, it has been announced by Mal Mountain, AID chapter chairman and Nor-Aid administrator. During this

## Proposal in On Army's Missile "B"

Northrop Norair Division has completed and submitted its prime proposal on the Army's new Missile "B" weapon system.

Missile "B" is planned as a division support missile that is simple, rugged, and reliable. It will be deployed to supply greater fire support to Army divisions.

Contractors competing on the new weapon held a bidder's conference at the Army Ordnance Missile Command, Huntsville, Alabama, June 15. Proposals were then submitted to the Army Ordnance Missile Command, Technical Manager. Deadline was mid-July.

From those submitted, two or more contractor proposals will be selected for a 60-day program definition phase. This will permit development of a detailed

(Continued on Page 2)

## Palmdale Scores with Suggestions

Norair - Palmdale people are proving the adage that to see trees you must look at trees and not at the forest. Trees in this case being ideas on better ways to do the specific jobs. And it is evident from Palmdale's fine on schedule record, if specifics are done well, the overall is going to be a success.

During the past year, Base Administrator Tom McCracken reports that over 34 suggestions have rung the payoff bell. Payments range all the way from the minimum \$10 to as high as an aggregate of \$239 paid to Harold Bergman for four good ideas.

As a result Harold is Norair Suggestion Award Man-of-the-Month for June. His top money idea was a landing gear test box which earned \$111.

Most prolific idea man at Palmdale during the year was Ivan E. Van Trease who earned \$172 with six separate suggestions.

Next was John Maesele with five. Quincy R. White was fourth in numbers of paying suggestions with three.

The complete list of suggesters during the past year: Elizabeth Prenter, Ivan E. Van Trease,

(Continued on Page 3)

two-week period all Norair personnel will be asked to review their AID and Nor-Aid contributions for the coming year.

Organization clerks have complete information on the AID plan and are ready to answer questions and assist contributors in filling out the necessary forms.

Under the AID, Nor-Aid payroll deduction charity plan, no campaigns, or special charity drives take place in the Division. The sums paid into the plan are distributed to charities under the AID United Givers banner and to Nor-Aid and to charities specifically named by the giver.

The plan can be tailored to fit individual charity policies.

Money is handled in the following ways, depending on the giver's wishes:

(1) If no specific charities are named, the money will be divided equitably among the 13 AID United Givers and Nor-Aid charities according to budget needs.

(2) The giver has the option of excluding any charities he wishes.

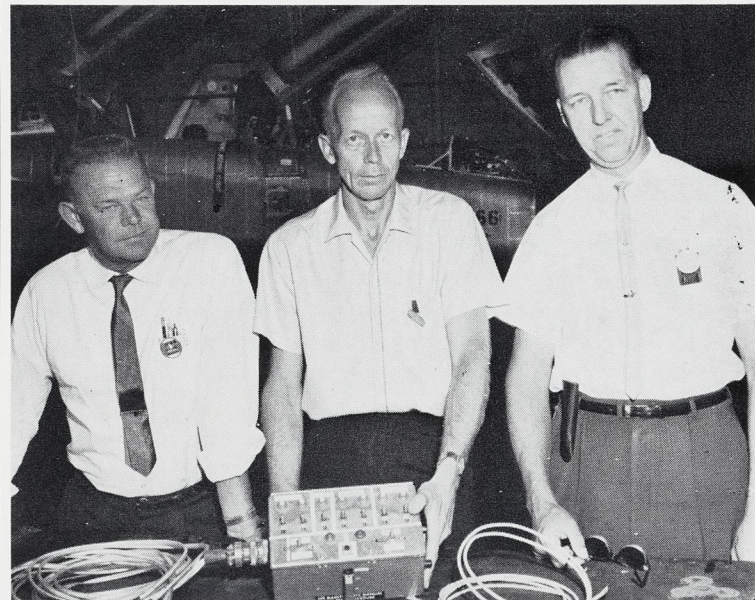
(3) The giver may designate his entire contribution to any single charity or split it in percentages to certain ones.

(4) The giver may designate a charity of his own choosing, providing the one designated is approved and accepted by the U.S. Treasury Department.

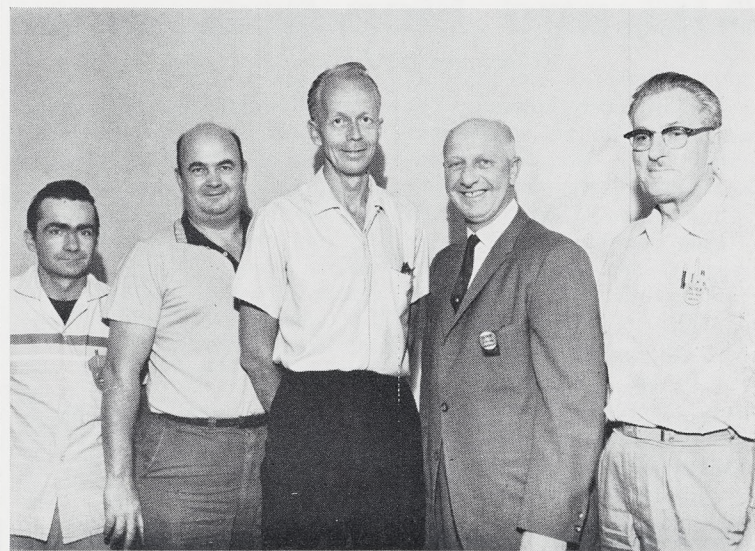
(5) Givers may have any amount they can afford deducted from their weekly checks. A suggested sum is 12 minutes of pay each week.

Norair's own charity, Nor-Aid (Continued on Page 2)

## At Palmdale, \$\$\$ Ideas



**MAN-OF-THE-MONTH**—Palmdale's Harold O. Bergman has his name in lights as Norair Suggestion Award Man-of-the-Month for June. He is here being congratulated by Bill Wible, foreman and Wally Johnson, general foreman for suggesting landing gear test box for T-38.



**TOP SUGGESTERS**—Palmdale folk have scored with 34 suggestions during the past year. Putting stamp of approval on the facility record is Al Graber, superintendent, Manufacturing Operations group, fourth from left. Suggesters are Ivan Van Trease, 6; Quincy R. White, 3; M-O-M Harold Bergman, 4; and Clarence Coursey, 2.



## Niagara of Knowledge

(From remarks by Lt. General Arthur G. Trudeau, chief of Research and Development, Department of the Army)

" \* \* \* . . . There is not enough cross-fertilization today in the various centers concerned with the sciences, both physical and social, the divisions of engineering or the areas of application of these knowledges and techniques.

"In this regard, what I have called the 'TALENT TRADE' principle, an 'industrial sabbatical concept', is beginning to show signs of a recognizable shape-up in industrial and academic circles, nation-wide—programs of sabbatical leave between university and institutional faculties and staffs and their counterparts in industry—financed by government, industry and universities—to enable both professors and practitioners to keep keenly aware of, and up-to-date on, all aspects of the revolutionary changes we are facing today and every new day in science and technology.

" \* \* \* . . . Today's outpouring of new scientific and technological information—from tens of thousands of laboratories—constitutes a deluge of Niagara proportion utterly submerging the efforts of bench and lecture men striving to keep—not up with it—but simply current concerning it!

"Our scientific journals—the major source of our information—publish an unbelievable wealth of material—and the backlog for publication grows daily. The sheer volume of new scientific papers published is now running about a half-million annually! Moreover, in the foreign area, we are hard pressed to even translate those written in other languages.

"A national information switchboard is needed soon—and a good one—whereby to plug in on direct, clear channels to the latest, current thought in the scientific fields.

"Right now, the nearest approximation is ASTIA—the Armed Services Technical Information Agency—a clearing house with a file of more than 600,000 scientific and technical reports produced by laboratories all over the world, a large part of which come from military and civilian laboratories, universities, contractors, and industrial research agencies in this country now engaged in defense work and frequently are as much as a year old when available.

"But, as important a clearing house as ASTIA is in the defense field, obviously, it alone is insufficient on the national level to cope with the ever-increasing flood of today's scientific literature. Our translation efforts are also disjointed and wasteful.

"I believe you in industry, our academic allies and the agencies of government need to get together and back what I think is needed here—call it, if you will, SATIC—a Scientific and Technological Information Center—a national clearing house for the most complete and comprehensive acquisition, translation, evaluation, storage and dissemination of scientific and technical information that we can obtain from all sources. . . . \* \* \*"

## AID and Nor-Aid

(Continued from Page 1)

has been in operation for seven years caring for needy Division families. Mr. Mountain states that in this seven-year period on more than 1350 occasions Northrop people have been helped in time of stress. Charity dollars granted amount to over \$332,000.

Nor-Aid committees are located at Norair facilities in Hawthorne, Edwards, Palmdale, and Nortronics ES&E and SS.

Charity giving the Norair AID way assures distribution by the Northrop formula which allocates monies to the town and community in which the giver resides.

AID operating costs are only 4.1 per cent, Mr. Mountain said. This is the lowest cost of charity operation known today.

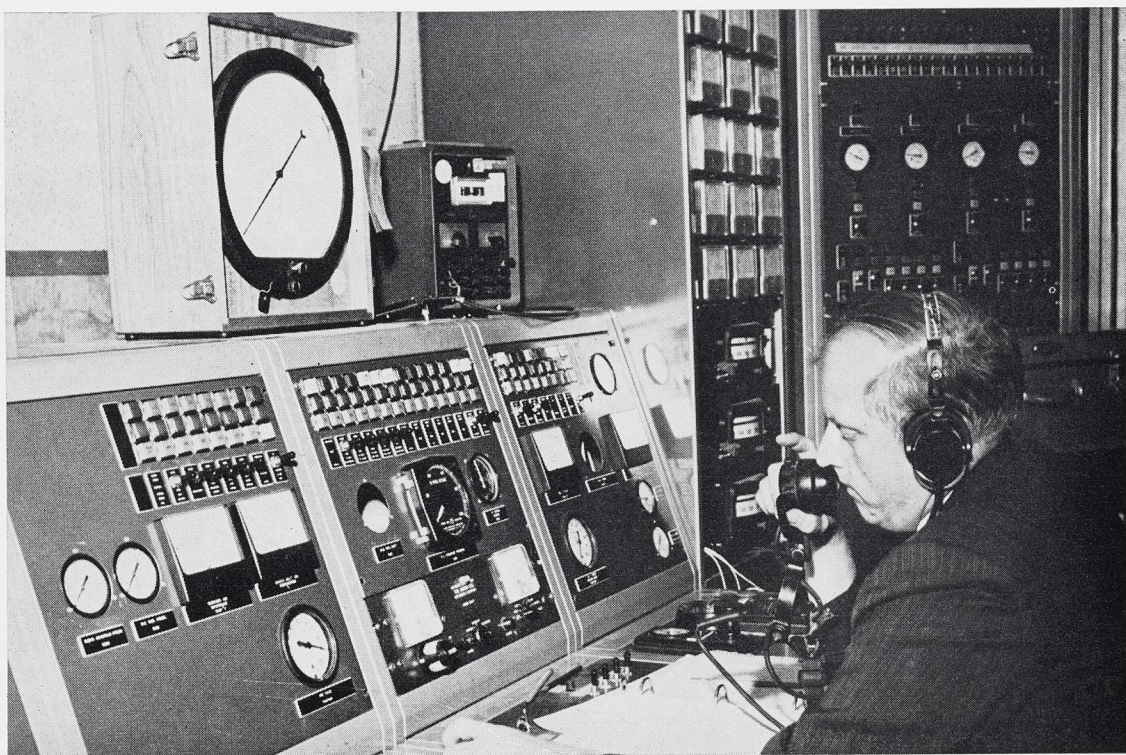
Mr. Mountain also pointed out that specific charity designations are good for one year only and will expire on an annual basis. This means that unless you contact your clerk for charity designations your charity dollars henceforth will be divided equitably among AID United Givers and Nor-Aid.

**Northrop Norair News**

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CHARLES BRADFORD, Editor

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## First Calibration Run



**FIRST CALIBRATION RUN**—Last week Northrop Norair's new hypersonic wind tunnel limbered its speed muscles for the first time. In a partially instrumented calibration run, the hypersonic leg touched Mach 10—over 7000 miles an hour. Top speed is Mach 14. Tunnel performance met design speed and reaction specifications well within allowable margins. No rework of either the polished flow surfaces or control system appears necessary. Minor valve problems only. Another good tidings sign in tunnel accuracy and efficiency is negligible flow distortion. Flow distortion, a wind tunnel bane, usually evident at high speeds, is due to irregularities such as bumps, nicks or rough patches in the steel. During run manometers registered no distortion with constant speeds through the entire usable cross section of model mounting areas. Photo shows Bob Lucas, lead engineer for Instrumentation group, Research Laboratories, checking instruments of Northrop designed and built control console. Wind tunnel control system is completely automatic.

## Northrop Men in Key IAS Panels

The national summer meeting of the Institute of the Aerospace Sciences recently held at the Ambassador Hotel found Northrop personnel fulfilling important speaking assignments in the program that served to reveal the latest aerospace advances.

Over 140 technical papers were delivered by top experts from military and industry fields.

Following the technical sessions, the conference was taken on a field trip to Point Arguello and Vandenberg Air Force Base.

### Missile "B"

(Continued from Page 1)

plan applicable to system development.

Based on the successful completion and evaluation of the program definition phase, a prime contractor will be selected for the complete weapon system development.

Northrop capabilities that fit the Company as a logical Missile "B" contender stem from four years of Corporation-funded study on weapon systems tailored to the Missile "B" type mission.

Also the Northrop-Raytheon team developed the Army's highly successful surface-to-air Hawk missile. Norair was responsible for the aerodynamic and propulsion design, the support equipment design and manufacture of missile structure and support equipment.

Northrop was the first aerospace company to place a major missile weapon system in operation, the intercontinental Snark. Management techniques, guidance systems, support, and maintenance and many other innovations first used in this program now form an integral operations part in nearly all of the nation's defense hardware.

Leading the Northrop contingent was Richard E. Horner, Corporate senior vice-president, Technical, and vice-president and general manager, Northrop Space Laboratories who participated in the panel discussion entitled "Weapon System Management After Ten Years."

Dr. K. N. Satyendra, director, Space Defense Systems Technology and Analytical section, Northrop Space Labs, presented "Mid-Course Phase" at the Weapon Defense System secret meeting.

H. B. Kennedy, Technical staff member, Northrop Space Labs, spoke on "A Gyro Momentum Exchange Device for Space Vehicle Attitude Control."

Joe Der, Norair senior engineer, presented "Theoretical Analysis of Jet-Ground Plane Interaction." Author of this paper was Dr. Y. C. Shen, Norair Technical. Shortly before the conference, Dr. Shen accepted a request to present a paper entitled "Some Fallacies in the

Formulation of Optimum Trajectory Problems" before the fourth U.S. National Congress of Applied Mechanics at Berkeley.

### DIVISION ADDS TO LONG RANGE PLANNING STAFF

A former newspaper man, editor and publisher of the Buena Park Express has been appointed to Norair's Long Range Planning section.

Philip S. Horwith, previously development planning staff to manager of Marketing, Nortronics-Anaheim, has joined Norair to assist in the development of



PHILIP S. HORWITH

Division long range plans and strategy. W. E. Fellers is director of Norair Long Range Planning.

Mr. Horwith will be engaged in assessment of trends and business opportunities.

Prior to his Northrop association at Anaheim, Mr. Horwith was Washington representative, counsel and executive secretary, Clock and Watch Manufacturers Association of America, a position which he held for five years.

Prior to this, he was editor and publisher of the Buena Park Express for two years.

### FLIGHT FIELD PARKING FOR "O" LOT FOLK

Norair personnel who normally park in the "O" lot located on El Segundo Boulevard have been temporarily displaced due to the Kiwanis annual fair.

The fair which started July 14 will continue through July 23.

Flight field parking for first shift "O" lot personnel has been made available through Gate 5. A decal is required which is available at the gate.

Second shift "O" lot people are being accommodated in the Norair leased facility at 12600 Yukon. Approach is from El Segundo Boulevard on the south and Yukon on the north.





## RIDES WANTED

7 a.m. — 3:45 p.m.

WASHINGTON BLVD. & SEPULVEDA, Culver City, Harold L. Bennett, tie line 481, ext. 31 & 62, VE 7-4237. 2

7:30 a.m. — 4:15 p.m.

CRESCENT & MOODY OR BLOOMFIELD & ARTESIA, Cypress, Laura Curtis, ext. 621, TA 7-0128. 3

8 a.m. — 4:45 p.m.

OCEAN GATE & 130TH ST., Hawthorne, Could meet party on the corner of El Segundo & Ocean Gate, Helen Benagen, ext. 643, OS 5-8772. 5

LA CIENEGA & CENTINELA, Inglewood, Could meet party on Hill off of LaCienega or on Beach Ave. off of Centinela, Mary Ann Kauek, ext. 631, OR 2-6344. 5

BEVERLY DR. & OLYMPIC BLVD., Beverly Hills, Mary F. Hughes, ext. 1801, CR 5-8565 after 7 p.m. 5

WESTERN & 9TH, San Pedro, Can drive Tuesday & Thursday in return for ride Monday, Wednesday & Friday, R. J. Hollinsworth, ext. 408, TE 3-7780. 5

4:30 p.m. — 1 a.m.

IMPERIAL & CRENSHAW, Inglewood, Rachel Ann Pluth, ext. 2123, PL 6-7302. 10

## RIDES OFFERED

7:30 a.m. — 4:15 p.m.

CRESCENT & MOODY OR BLOOMFIELD & ARTESIA, Cypress, Laura Curtis, ext. 621, TA 7-0128. 13

CARSON & DEL AMO, Torrance, E. A. Hubarek, ext. 788, FR 1-2705. 13

8 a.m. — 4:45 p.m.

WESTERN & 9TH, San Pedro, Can drive Tuesday & Thursday in return for ride Monday, Wednesday & Friday, R. J. Hollinsworth, ext. 408, TE 3-7780. 15

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Norcrafters.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

RENAULT DAUPHINE, 1960 4-dr. sedan, r/h, \$150 my equity, take over 22 payments at \$30.44 a mo. PL 5-8040.

HOUSE, 3-bdrm. & den, 3 baths, wall-to-wall carpeting throughout & drapes, kitchen built-ins, inc. refrigerator, built-in barbecue in dining room, 4-yrs-old, in Rollins Hills Estates, \$38,000. FR 5-3242. A

SUNBEAM ALPINE, 1954, white convert., very good cond., \$475. FR 5-5632. A

FORD VICTORIA, 1951, automatic, r/h, very clean, \$300. DA 4-8663. A

DISHWASHER, Lady Kenmore, cost \$186.16, used 4-months, \$95. TE 3-9862.

CHRYSLER, Windsor, 1949, 4-dr, good engine & tires, \$65. FR 4-2915. A

DOGHOUSE, large, factory-built, redwood, \$15. DA 9-9464. A

MERCURY STATION WAGON, 1958, Voyager, 9-pass, 4-dr, h/top, r/h, air-conditioner, full power, \$1495. DA 9-8960. A

MONZA, 1961, coupe, 4-spd., black w/red interior, \$1875. OS 6-9667. A

RED BRICKS, 500 antique, suitable for fireplace, value \$37.50, \$25; 28 red wall caps 12"x8"x2", value \$9, \$5; freezer, extra large, chest type, 22 cu. ft., Amana, cost \$700, \$350. FR 4-7155.

AIR CONDITIONERS, 2, Fedders, 9500 btu, 1 hp motors, 220 volts, \$200 ea., or \$375 both. EX 1-4860. A

SAILBOAT, Winard Sabot, w/Fiberglass hull & dacron sail, \$250. GE 1-4735. A

CAMPER, short-bed truck, custom built, aluminum sides, \$50. DA 4-7959. A

TYPEWRITER, Underwood, long carriage, old but serviceable, \$15. PL 4-9711 A

## Palmdale

(Continued from Page 1)

H. F. Peters, Harold O. Bergman, John Maeseele, C. J. Laberdie, J. A. Benson.

Arthur J. Edwards, Russell M. McGlochlin, W. C. Deason, Quincy R. White, H. J. Burns, John H. Cheshire, E. T. Matthews, Clarence B. Coursey, E. G. Minghelli and Paul D. Zollinger.

## FOR SALE

AUTO EQUIPMENT, for Chevrolet, dual quads for 265, 283 or 327, complete setup, \$85; traction masters, chrome, \$20; Hurst dual-pattern linkages for 3-spd., \$25; 1961 heads, complete 348 cu. in., Engle Cam (101) tri-power, \$400; Don'tov cam & solids for 348, \$15; many extras; accordion, Universal, 120-bass, 3-switch w/carrying case, \$100. OR 4-1847. A

RAMBLER, Cross-Country Station Wagon, 1960, custom, r/h, power steering, automatic trans., 4 new tires, \$2000. NO 2-8349. A

AUSTIN HEALEY, 1960, 4-seater, red paint w/white leather bucket seats, o/drive wire wheels, soft top & tonneau cover, \$2150. OW 7-3328 after 6 p.m.

HOUSE, on 1/2-acre lot, 3-bdrm., separate family room, 2 fireplaces, Rollins Hills Estates, \$35,900. TE 3-2479. A

BACK YARD PLAYHOUSE, little girl's, \$25. OS 5-6016. A

OLDSMOBILE, 1953, 2-dr. Holiday h/top, r/h, \$200. OS 5-5053. A

PLASTIC PIPE, 50 ft. ea., 1 1/4", 12c ft., 1 1/2", 17c ft.; welding outfit, oxy. & acety., \$120; aluminum shower, \$5; deep well jet pump, \$95; 6 inside doors, 50c ea. VE 7-4237. A

VOLKSWAGEN, 1954, engine overhauled, good tires, r/h, \$495. DA 9-1705. A

ENGINE, 1961 Chevrolet 6, 8000 mi., all accessories, inc., \$235 tent, 10x20 J. C. Higgins wall-type, 7' ridge pole, \$125. FR 1-3769. A

GAS RANGE, 4-burner, \$15; jeep drawbar, \$850; aluminum top for Willys nick-up, \$125. 379-9110. A

TV, Zenith 21", \$35; dryer, Westinghouse, elec., \$15; typewriter, Smith-Corona, std., reconditioned, \$95. OR 1-3283. A

CHEVROLET, 1952 convert., good mechanical condition, \$150. FR 8-3809. A

REFRIGERATOR, Crosley 8 1/2 cu. ft., 3 1/2-yrs-old, across top freezer, \$100; radio, Motorola for 1959 Porsche, \$30. 371-7691. A

AIR CONDITIONER, refrigeration-type, Vornado, 1.5 ton, 220 volts, \$95; gas heaters, 2, small, recirculating-type, \$6 & \$3. 377-4320. A

FALCON, 1960 2-dr. sedan, w/extras, \$1350. GR 9-8552. A

WASHING MACHINE, Whirlpool Imperial, automatic, white, good running condition, \$45. LIN 4-7673. A

PONTIAC, 1956 Starchief, 4-dr, h/top, r/h, engine completely overhauled, \$675; bedroom set, hardwood good condition, \$20. OS 5-2159. A

ROASTER, Westinghouse, elec., full size, w/cabinet & Pyrex casseroles & light indicator, \$25. TE 3-7621. A

HOME, 3-bdrm., 1 1/2-bath, in Torrance, \$19,500. 371-8945. A

O. B. RUNABOUT, 16' Ryan hull, 7' beam, 43" freeboard, Evinrude 30 hp elec., less than 40 hrs. on engine, upholstered seats, canvas top, skis anchor, running lights, spotlight, 2 6-gal tanks, underslung bia wheel trailer, \$795. Box 1501. A

BOAT, 16' ski & fishing, controls, 35 hp Johnson, fully equipped, w/till trailer, \$850. DA 3-0723. A

CADILLAC, 1958 convt., \$2200. FA 1-0706. A

BICYCLE, boy's or girl's, 20", \$10; saddle bags for motorcycle, leather w/chrome rack, \$15; starter for 1949 or 1950 Dodge or Plymouth, \$5; clothesline, larac, umbrella-type, portable, \$5. PL 9-2234. A

## WANTED TO BUY

COURSE on sleep teaching or personal betterment, records or tape. OS 6-8331.

CHEVROLET OR FORD, 1956 or 1957, stick, clean. TE 1-6233. B

## RENTALS OFFERED

APT., 2-bdrm., w/w carpets, drapes, all elec. Gold Medallion, radiant heat thermo controlled, built-ins, aarbaae disposal, laundry facilities, soft water furn., garage w/storage compartment, \$135 mo. OR 1-4310.

APT., 1-bdrm., furn. or unfurn., 1st floor in 5-unit bldg., newly decorated, spacious rooms, 1/2 block transportation, aarbaae disposals, hardwood floors, ceramic tile glass incl. tubs, North Hollywood area, \$84.50 furn., \$74.50 unfurn. ST 4-0676 after 6 p.m. E

APT., large, deluxe, built-ins, carpets & drapes, laundry facilities, close to Northrop & shopping, \$120 mo. SP 2-1992. E

APT., large, deluxe, 1-bdrm., unfurn., disposal, carport, sound insulated, near Northrop, bus line & shopping center, \$75 mo. OS 5-9695. E

## PERSONALS

LEAVING July 21 for Tulsa, Okla. on 2-week vacation. Will take 2 riders. Box 1502. L

COLLECTOR of aircraft three views, all periods & types, wishes to contact persons interested in same. OR 0-7624. L

## FOR SALE OR TRADE

FORD, 1961 Galaxie, 2-dr, h/top, r/h, power steering, w/w, \$2495 or trade for older car or take cash for equity, 391-1654. M

## Leuzinger Swim Sessions



**COME ON IN**—The NRC Leuzinger High School swimming sessions are off to a fine start. Opening night shows the newly decorated pool afroth from the activity of Northrop juniors and their parents. Swimming nights are Monday, Tuesday, Wednesday, and Thursday. Hours are from 4:45 to 6:45 p.m. All personnel and their immediate families are invited to participate. All required is a towel and bathing caps for women. A lifeguard is always in attendance. It's free, free, free.

## Whispering Lakes Next For NRC Golf

Whispering Lakes, site of the next NRC golf meet, has been reserved for July 22, it is announced by Ken Clayton, commissioner.

Whispering Lakes is near Ontario. One should take the San Bernardino Freeway past Ontario to Archibald, south on Archibald three miles to Riverside Drive. Whispering Lakes is one-quarter mile to the right.

Entry forms are now available at Personnel Activities. Fees are also payable there.

Starting times as usual are assigned on first come basis. The tournament will begin at 11 a.m.

There is a limit of 100 golfers. A golfer may sign up for only one foursome, cautions the commissioner.

## NRC CAMPERS TO MCGILL PARK FOR WEEKEND

Fred Armstrong, Norair commissioner, NRC Camping Club, announces that the next outing will be held at McGill Park which is near Frazier Park and near the end of Mt. Pinos Forest Highway.

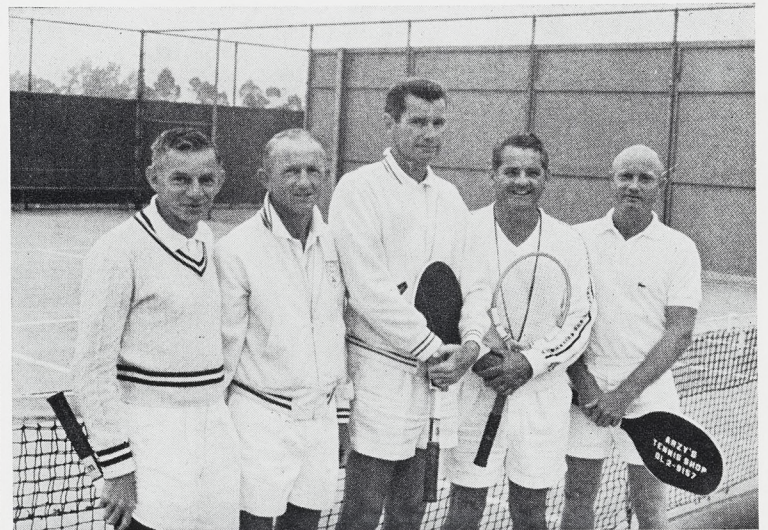
Everyone is invited, says Fred.

There will be the usual potluck dinner Saturday night. There is spring water. There are tables and stoves and the camp is located in the tall pine timber.

Dates of the outing are July 28 through 29.

There is a charge of \$1 a night for the campsite.

To reach McGill Park, take Highway 99 north past Gorman and keep an eye peeled for the Frazier Park sign which is near the top of the grade. Turn off on this road and continue until McGill Park is reached.



**INDUSTRIAL LEAGUE CHAMPS**—Norair tennis team wound up initial league play with 13 wins and one loss. The boys edged out Douglas Santa Monica for top spot. From left, Bill Lurie, NRC tennis instructor and number one seeded national senior tennis man, John Potts, NRC commissioner, Bill Armstrong, Everett Jefferies, and Don Theleman, captain. Coming up is industrial tournament in which the NRC will engage Douglas, Hughes, Servomechanisms, Aerospace, Space Technology Laboratories, AiResearch, and RAND.

## Catch a Big Fish? NRC Award May be Waiting

A review of the NRC Fishing Club prize award program is in order.

For fish of the month:

Saltwater: A glass rod will be presented each month for registering the largest fish, any specie (except shark).

Freshwater: A fly rod will be presented each month for registering the largest catch, any specie.

All Northrop personnel are eligible for these prizes provided

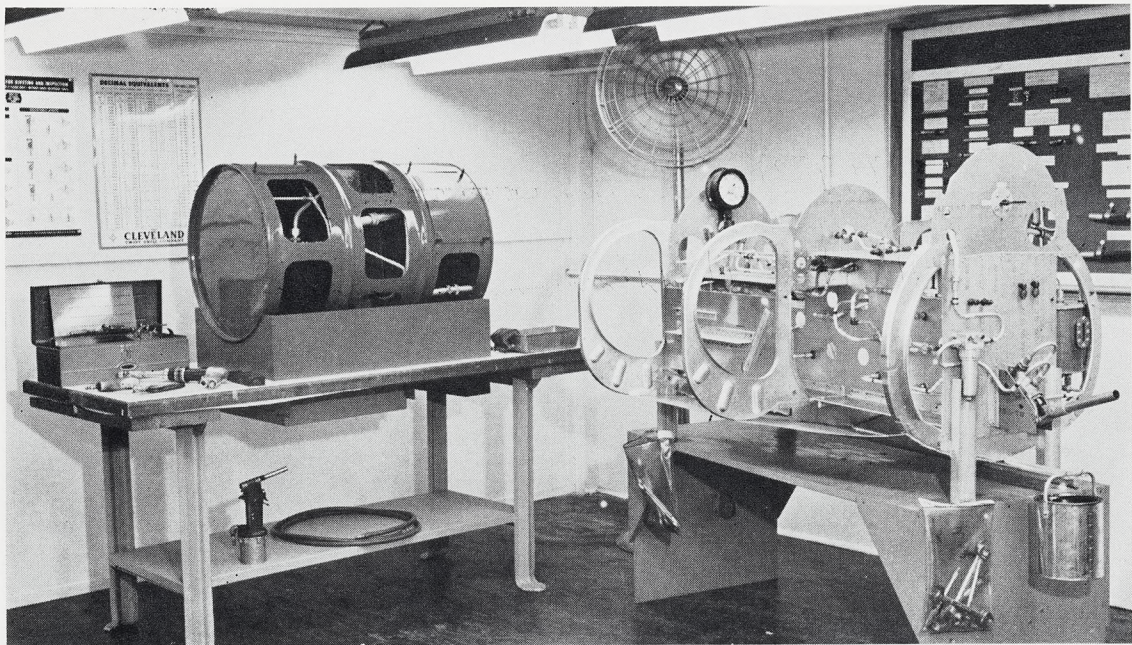
ing the fish is caught where a California angling license applies and the fish is properly registered.

A handsome NRC year trophy will be awarded for the largest catch registered, both fresh and saltwater (shark excluded), during the season.

A Southwest Anglers Button award will be presented for registered catches, both fresh and saltwater, meeting weight and length standards that are caught where a California angling license applies. Buttons are sterling, colored to designate fish caught and are worn on fishing cap band. This is a year-round award. One button only per specie, per year. For particulars on button winning fish ask at the NRC office for the 1962 table of weights and lengths.

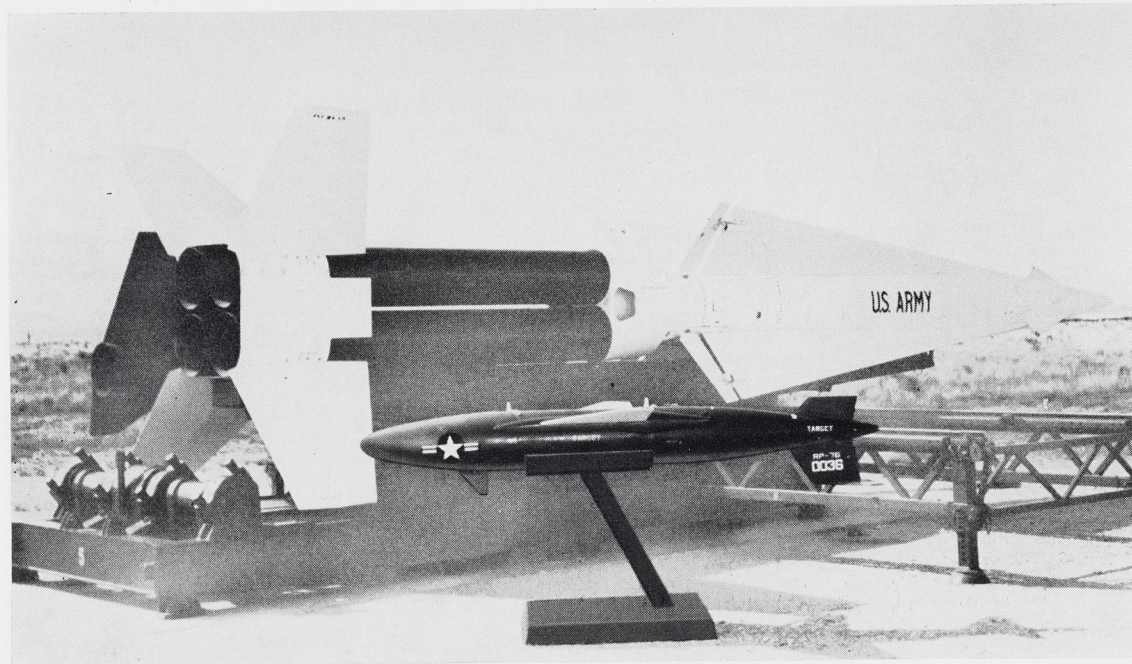
**BUY  
FREEDOM  
BONDS**





**QUALITY PLUS**—Division's Industrial Training program under the direction of Clarence Stine, general supervisor, calls for utmost rigidity and realism in certification training, this to assure undiminishing quality and good workmanship in all Norair products. Here is illustrated newest innovation, a fuselage or hard-to-reach bay simulator fabricated from framework of 50-gallon drum. A classroom device, properly set up, it can pose any problem encountered on the assembly line.

## Teamed for Straight Shooting



**HERCULES AND FRIEND**—Pictured in front of a Nike Hercules missile, this Radioplane RP-76 target is the simulated enemy on which Nike-firing United States Army Air Defense Command troops will practice. The rocket powered RP-76 tops 60,000 feet altitude at transonic speeds while appearing radarwise to be an invading enemy aircraft. Unless destroyed by its adversary, the target automatically deploys a parachute after completing its training mission for soft landing and reflight. U. S. Army Ordnance recently authorized a \$7½-million program in which Radioplane will produce 400 RP-76 target missile systems. Under terms of the contract Radioplane personnel will fly the targets and maintain them.

## Materiel's Earl Rossomme to Norair Small Business Post

Earl M. Rossomme, 20-year man in Materiel, has been appointed Division Small Business Liaison officer, it has been announced by Bob Lloyd, vice-president and assistant general manager, Operations.

Mr. Rossomme will support the overall Northrop Corporation small business subcontracting program and specifically will maintain liaison with the Government on small business matters and administer Norair's small business subcontracting program.

He will also provide potentiality information of small business concerns to the Division in "make-or-buy" decisions and coordinate measures within this Division and with other Corporate divisions in order to assist in uniformity of policies and practices, Mr. Lloyd said.

Mr. Rossomme first came to Northrop in 1942 as a stock clerk in Materiel. Since that time he has held positions successfully as

Materiel supervisor, a member of the director's staff and staff assistant to the director. Between the period of 1950 to 1958 he



EARL ROSSOMME

was purchasing agent and applications engineer at Nortronics Anaheim.

Mr. Rossomme was educated at UCLA in law.

**AT MARIPOSA**—Men have no corner on \$\$\$ ideas at

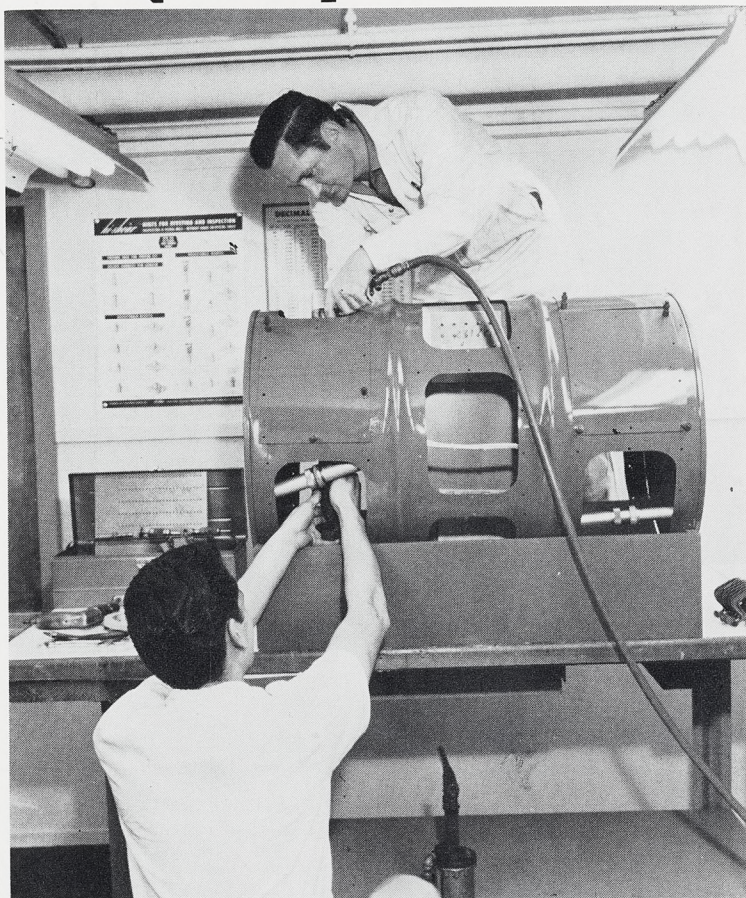
Norair for April Man-of-the-Month is a woman, pretty and feminine at that—Marilyn Commella of Materiel. Here Charles Murray, Materiel purchasing agent, presents Suggestion Award check for \$205 to Marilyn for suggesting a change in vendor instruction form processing.

## In Lights

**IN LIGHTS**—Sheet Metal's A. C. Stewart, left, is Man-of-the-Month for May.

Photo shows Foreman A. A. Black observing his dispenser for Protex adhesive paper which is used to cover parts, prevent scratches and other damage. Stewart received \$345 for his payoff idea. (See Page 1 for Palm-dale man whose name is in lights for June.)

## Quality Certified



**TRY IT THIS WAY**—Up for certification, Norair assembly line men Ted Beeson and Don Silva work out intricacies of quality riveting in cramped quarters. In this case, hydraulic line adds to dexterity factor. Industrial Training's certification program, a year-round affair, is being constantly upgraded to keep pace with workmanship challenges of the space age, and spans the technology from close-quarters riveting as in this case to honeycomb assembly, metal bonding, and fusion welders.

## CHAIRMEN FOR TEST PILOT MEET

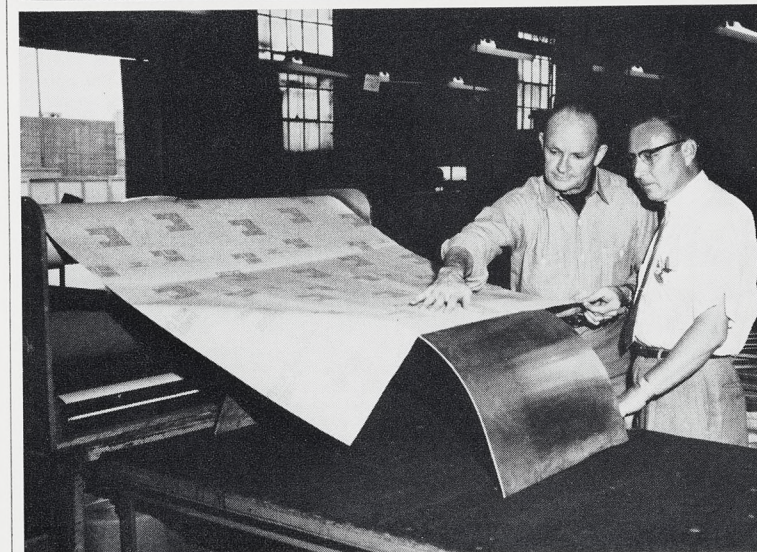
Northrop Norair test pilots have been named to key functions in the upcoming sixth annual symposium and banquet of the Society of Experimental Test Pilots.

Drury Wood will be general chairman for the entire event, and Hank Chouteau will be banquet chairman.

Appointments were made by W. M. Magruder, chief engineering test pilot for the Douglas Aircraft Division and SETP president. Mr. Magruder also said

Major Eugene P. Deatrick, USAF, would be symposium chairman.

Chairmen for technical sessions at the Beverly Hilton Hotel, September 28-29, are: Donald P. Germeraad, chief engineering test pilot, Convair, San Diego, "Transports"; Major Donald R. Segner, USMC, U.S. Naval Postgraduate School, Monterey, "V/-STOL Aircraft"; and George Cooper, chief test pilot NASA Ames Research Center, Sunnyvale, "Space and Research."







# Northrop Norair News

Issued biweekly by Norair Division of Northrop Corporation

Wednesday, August 1, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, RAPID CITY, EL PASO

## Well Done for Norair T-2 Activation Manager, Team

Mr. Thomas V. Jones, President  
Northrop Corporation

Dear Mr. Jones:

In these closing days at Ellsworth Air Force Base of the Martin Marietta and Northrop Corporation task, I now find that I have some time to commend those who accomplished so much during the activation of this site . . .

In the time span between November 1961 and June 1962 there were many times when the assignment required long hours of scheduled meetings, short response time, re-assignment of functional responsibilities, and detailed personalized attention to the job.

It is with great pleasure that I tell you that I found your site manager, Max Fayrweather, a strong leader, an extremely loyal Northrop employee and a conscientious and loyal American. His personal desire to complete the job for the good of his Company and our country was always in the forefront.

In the Titan Site Activation Program the Martin Marietta Corporation has instituted an award for those persons who perform their duties above and beyond their job classification and monetary remuneration. I would appreciate it if you would present the enclosed Gold Titan Award in the name of The Martin Company and with my warmest personal regards to Max Fayrweather for his management skill in the successful accomplishment of the activation of the Ellsworth Air Force Base Titan Site.

Yours very truly,  
THE MARTIN COMPANY  
John P. Healey, manager  
Site Activation Operations T-2

### From Mr. Jones to Mr. Fayrweather

Mr. Max Fayrweather  
Assistant to Vice President, Operations

Dear Max:

We were very pleased to receive a good letter from The Martin Company about the excellent job you and the Northrop team did on the T-2 Martin site at Ellsworth Air Force Base.

This fine commendation is a wonderful tribute to you and all the Northrop people who shared your difficult task. I want you to know that we are very proud of all of you. Your efforts have brought great credit to the company and we appreciate it.

With warm personal regards, I am

Sincerely,  
Thomas V. Jones  
President

## The Gold Titan Award



**WELL DONE**—Thomas V. Jones, Northrop Corporation president, center, and Dick Nolan, Corporate vice-president and Norair general manager, right, congratulate Max Fayrweather, Division T-2 site manager on his receipt of the Martin Marietta Corporation's coveted Gold Titan Award. Commendation, presented by John P. Healey, Martin manager, T-2 Site Activation Operations, is for Titan project people who perform their duties above and beyond their job classification and monetary remuneration. For commendation letters from Mr. Healey and Mr. Jones see column adjoining.

## "X-21" IS OFFICIAL NAME FOR LFC DEVELOPMENT AIRPLANES

Northrop's Laminar Flow Control demonstration airplanes have received the official designation "X-21". It has been announced by the U.S. Air Force.

Former designation was the NB-66D.

Two X-21 airplanes are

presently undergoing assembly at Plant Three (Crenshaw) incorporating Northrop's Laminar Flow Control system.

The letter X used as a basic mission symbol signifies that the vehicle is for research and is designed for testing configurations of an original nature. Although X aircraft are not intended for use as tactical aircraft, the X-21s will be used to demon-

strate the practicality of LFC under operational conditions.

Developed by Northrop under sponsorship of the Aeronautical Systems Division, U.S. Air Force Systems Command, the LFC method is designed to increase the performance of large aircraft by decreasing friction drag. Compressors mounted in the underwing pods suck air through paper-thin slots in the extra-large (Continued on Page 4)

## Jones to Speak at Next M-C Meeting, Friday, August 3

Northrop Corporation President Thomas V. Jones will be speaker for the evening at the next Management Club meeting, it has been announced by Al Binsacca, Club prexy.

Mr. Jones, who will speak before an anticipated capacity audience at the Thunderbird International, will discuss current developments at Northrop and give an important insight into Company directions and product emphasis for the coming months.

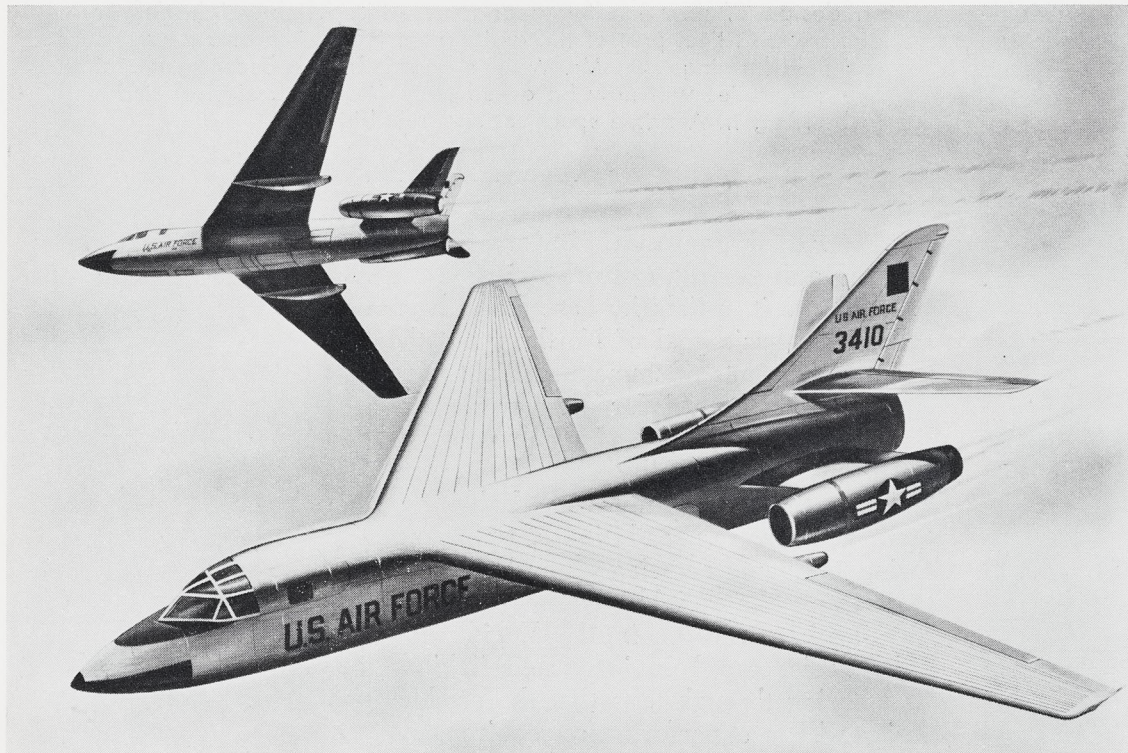
Date of the meeting is August

3. Social hour starts at 5 p.m.

Mr. Binsacca advises that due to expected heavy turnout, members who wish to attend should secure their reservations without delay.

Order of events for the meeting has been changed to provide better efficiency for conduct of Club business and the utmost in facilities perfection for audience reception during the major address.

"The Northrop Management (Continued on Page 4)



**X-21**—Artist's conception of two X-21 Laminar Flow Control aircraft now being completed at Norair's Plant Three, Crenshaw. First flight is scheduled for shortly after the first of the year. X-21 aircraft will demonstrate the practicality of Northrop Corporation's Laminar Flow Control system under operational conditions. Compressors mounted in the underwing pods suck air through paper-thin slots in the extra large wings to prevent turbulence in the boundary layer. The method is expected to increase range, payload and endurance of large aircraft by 50 per cent or more.

"... as I see it"

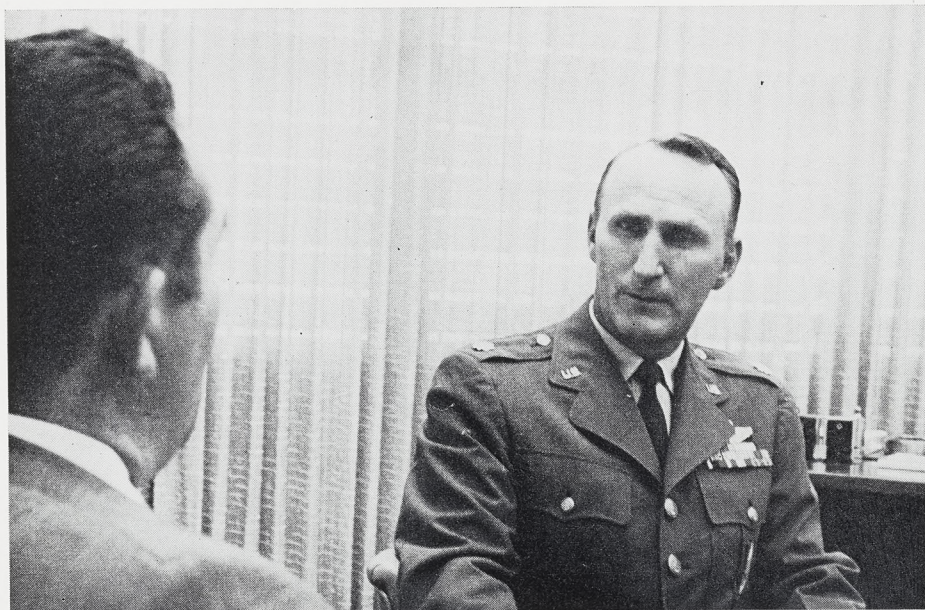
**Reliability---you can help!**

(See Pages 2 and 3)



# "... as I see it"

*How can you help increase reliability in aerospace hardware?  
Key men from Norair Technical give you their best.*

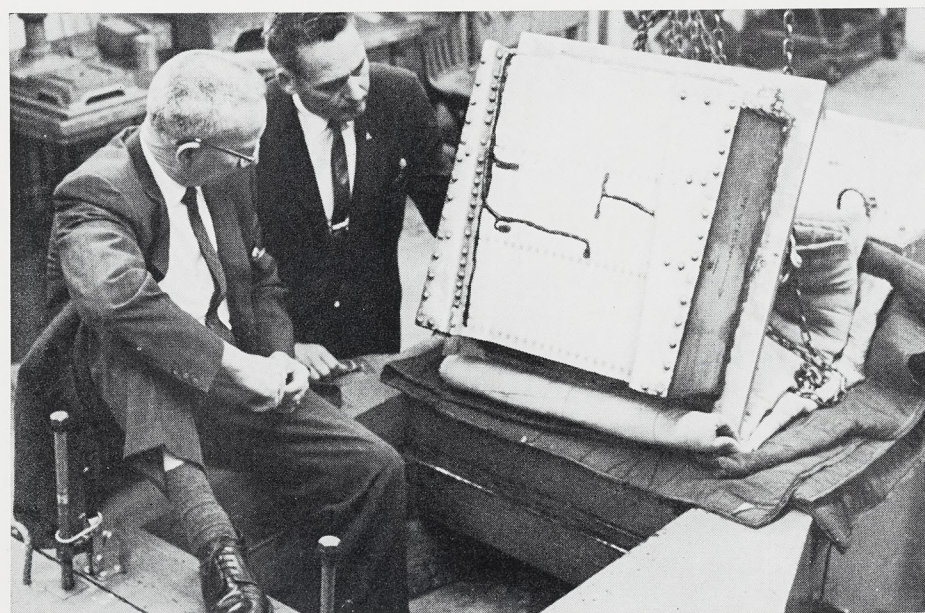


**RELIABILITY**—Jim Matthews, manager, Technical Operations department in his Engineering and Science Center office, discusses Division product reliability with Lt. Colonel Charles W. Clark, Northrop Air Force Plant representative. Complexities of space age, increasing sophistication of the machine bring the need for reliable products ever more sharply into focus. Northrop policy is one of no compromise with reliability, quality, and suitability.

## Chal Strayer, supervisor, Mechanical Design branch

"Designers must design for function and environment . . . Environment in this case includes the processes of manufacturing, inspection, testing, maintenance, usage, and people. If the designer has a production design and designs a system that is essentially a laboratory development with no tolerance for variation, he has problems. If the designer conceives a functional component without providing for inspection or test—more problems. If a system will be buried inside a vehicle and is to be maintained by an enlisted service man during an Alaskan winter and the designer is

thinking only of how well his system will work on the laboratory bench—problems . . . This means that the designer must have a complete realistic understanding of the actual environment the product will pass through. He must then create the simplest design that will perform its function in that environment and he must follow-up to determine that his concepts were valid as his design comes into use and finally he must take the action to correct the design of the environment where a deficiency exists."



**ENVIRONMENTAL TESTS**—"Our first job is to design facilities and to develop test methods which will assure simulating the conditions under which the end product will operate," states Royal Jackman, left. Here Mr. Jackman and Larry Pieper, supervisor, Laboratory Services, check operation of a progressive wave acoustic test chamber.

## Jim Matthews, manager, Technical Operations department

"There are specific contributions that we can make to insure reliability of our products. With a fundamental knowledge of what makes a product reliable, and likewise unreliable, the job becomes an attitude—a way of life at Northrop . . . Everyone has his pet story to demonstrate a specific point in how things become unreliable. My favorite: A small electronic part was specified very simply on the drawing callout to be installed using two AN washers. To a conscientious mechanic this looked like a typical drawing error—and only one was used. But the engineer had devised this simple method to dissipate the heat generated by the part when it had failed in test. Since the use of two washers is not accepted practice, a simple note stating 'use two washers—heat sink' would have considerably reduced the possibility of one ever having been left out, even by the customer mechanic in the future. It would have been picked up all the way along the line . . . Know and understand in your special area what contributes to unreliability. If you are not sure, ask."



**DESIGN**—"Chal" Strayer, center, confers with Senior Lead Engineer R. H. White and Project Office Representative C. D. "Doug" Factor, on design of new landing gear for Northrop lightweight family of airplanes. Critical part of the assignment is creation of a new tire for sod field landings. On Mr. White's board the tire becomes a reality. Tire companies will now be asked to review the design as first step to building it. A prime specification—reliability.

## Royal Jackman, chief, Engineering Laboratories

"As I see it, reliability has always been a firm and basic goal of Northrop but the new requirements of unmanned flight have emphasized the need for even greater reliability . . . Attainment of reliability takes two forms: the job of the engineer to create a design that will produce a reliable system; and the responsibility of manufacturing and manufacturing support elements to produce the reliable system over and over again . . . We in the Engineering Laboratories can help increase reliability by assuring through tests that the product design will meet performance requirements in all of the environments to be encountered, and with adequate margin. Therefore, our first job is to design test facilities and to develop test methods which will assure simulating, as nearly as possible, the conditions under which the end product will eventually operate . . . In this way the designer can have a greater confidence that his system, if produced by Manufacturing exactly as designed, will perform reliably in flight."







**W. W. Harter, chief,  
Reliability group**

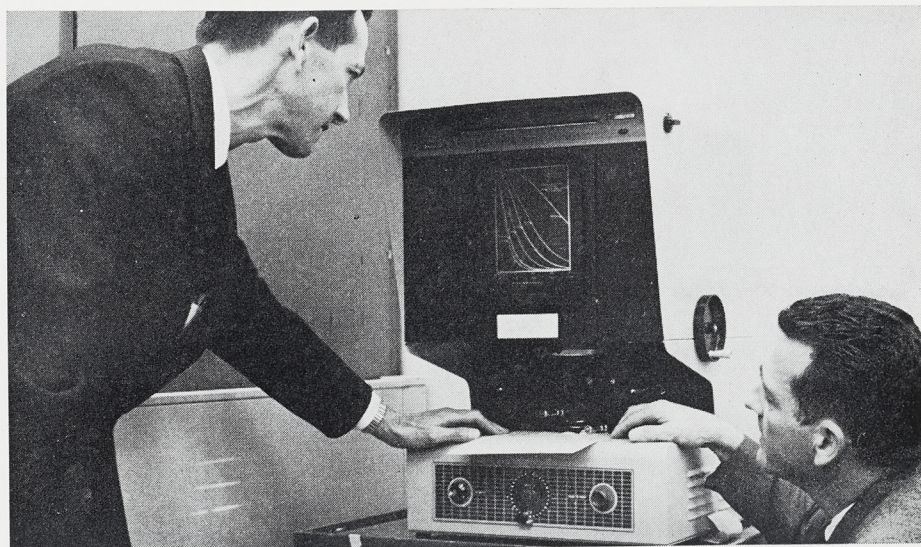
"The definition—: reliability in aerospace is defined as the probability of the product performing the assigned mission when operated within specified design conditions . . . I think that reliability in the optimum can best be achieved by (1) design adequacy; (2) fabrication in accordance with design; and (3) correct usage. Of course, 100 per cent reliability should be the goal of every man on the team from advanced designers to the mechanics on the line. In spite of qualification factors such as cost, repair capability, and expendability of the product, we must never

compromise. Remember that costs and schedules, and performance and quantities are cold hard facts while reliability is intangible and never makes the headlines, that is until a failure occurs . . ."



**Jim Cassell, director, T-38A Program**

"From the Project office view, attitudes are a powerful factor in achieving reliability. And the attitude relationship to product creation stems from training and from team association. Understand the goal, be sympathetic to its attainment, and the battle is already half won . . . Reliability starts in the formative stages of the design where the product is visualized in the classical form—the simplest hardware expression of the requirement. As the system progresses its simplicity will be challenged repeatedly. Make it more versatile. Extend its capability. Toughen it and expand it. Send it into deeper environments. The easy way is to 'gimmick' or gingerbread the product. But this is not the best way. The essence of reliability is summed up by aerospace designers when they say, 'The most reliable part has no moving parts.' Here figuratively is the starting point, where product life begins, then we add speed, endurance, stamina, intelligence, moving parts in each case. As we add each moving part we must remember that we add also to the cost, subtracting all the while from reliability, maintainability and from safety."



**MICROFILM READER**—Wendell Harter and John Puerta, senior Reliability engineer, observe reliability curves as Norair microfilm reader spins out thousands of test and operational facts.



**COMMUNICATIONS**—Norair key men on the T-38 program meet to assess progress. Presiding is Jim Cassell whose office is in constant touch with Air Force Project Office. From left, Mr. Cassell, Jack Wells, chief test pilot, hidden; H. D. Parker, supervisor, Engineering Field Support branch; W. G. Stuart, director, Engineering section; Roy Merriman, supervisor, Controls Design branch; Ernie Felis, project administrator, Engineering Flight Test section; Walt Kolar, supervisor, Field Service; L. A. Nelson, director, Test section; L. J. Yancey, chief, Structures and Mechanical Systems group; F. L. Lyons, chief, Electronic Systems group; W. J. Tebo, assistant to the T-38A Program director; and J. E. Wolff, planner, T-38 Project.

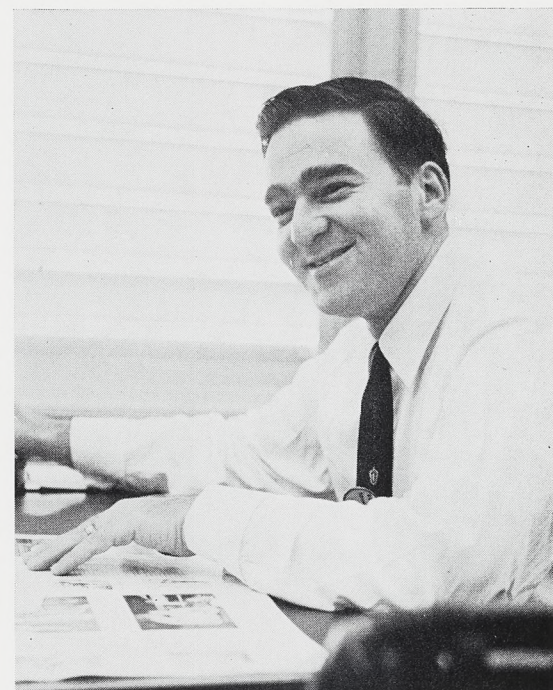


**← Jim Haney, chief, Missile Systems Eng.**

"New designs require imagination, independent thinking. There is no room for inhibitions. Therefore, the responsibility to the Norair team and the customer is very real . . . Reliability in Preliminary Design is an important tool which helps build good products. (1) Thorough subsystem assessment; (2) parts counts; (3) from preliminary sketch to customer operation; and (4) just plain common sense . . . Remember, if you can't get the bugs out the contract will go to a less spectacular system."

**C. H. Bernstein, chief, Systems Evaluation**

"One of the important responsibilities in Systems Evaluation is to relate reliability requirements to system cost-effectiveness. The Norair method for relating maintenance to reliability is based on many years of analytical effort and for the most part is contained in our 'method for support system maintainability.' Any simulation model used in analysis must also reflect criteria which will serve in the design of future Air Force weapon systems."



**Ray Bucher, chief,  
LFC Flight Test group**

"Reliability is a vital matter in Flight Test. Human life is at stake, plus thousands of hours of effort, plus hundreds of thousands, sometimes millions of dollars in Company and government funds . . . The customer must have a reliable product. He wants his airplanes in the air not in the hangar. Reliability helps get any mission accomplished and significantly, as the reliability factor goes up the maintenance factor goes down . . . Reliability of the first article can mean success of an entire product family. The T-38 has demonstrated this. Laminar Flow Control demonstration airplanes are being built with the same care and the same know-how . . . Every man must be his own reliability expert."



**ON THE LINE**—Reliability is a very real commodity to those who fly. Here Ray Bucher, left, discusses engine attach methods on the LFC airplanes with J. W. Shipley, LFC Quality Control supervisor, and Bill Rhodes, longtime Northrop man and foreman on LFC #1 airplane.





## RIDES WANTED

7 a.m. — 3:45 p.m.

HAWTHORNE BLVD. &amp; HWY. 101, Palos Verde Estates. David Lyon, ext. 1818. FR 8-3383.

PEPPERTREE LANE &amp; PALACE DRIVE SO., Portuguese Bend. O. Martin, ext. 2681. PL 4-3515.

8 a.m. — 4:45 p.m.

NORMANDIE &amp; 93RD ST., Los Angeles. Vicki Fox, ext. 1559. PL 6-9611.

PRAIRIE &amp; 177TH ST., Torrance. Rose Salomon, ext. 1815. 371-7940.

FIRESTONE BLVD. &amp; LAKEWOOD, Downey. Ronald Beller, ext. 2177, TO 1-9320.

## RIDES OFFERED

7 a.m. — 3:45 p.m.

LONG BEACH BLVD. &amp; PACIFIC COAST HWY., Long Beach. Lester H. Carr, ext. 2568. 437-5135.

8 a.m. — 4:45 p.m.

FIRESTONE BLVD. &amp; LAKEWOOD, Downey. Ronald Beller, ext. 2177, TO 1-9320.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

HOUSE, 3-bdrm., 2-bath, double garage, patio, w/w carpeting, drapes, built-ins, located in Hollywood Riviera, \$26,900. FR 8-2060.

EVINRUDE, 5 hp motor, runs good, \$50; end tables & coffee table, blonde, \$15; camera & movie projector, 8mm Keystone, light bar & screen, \$85. DA 4-6203.

TR-3, 1960 roadster, low mileage, r/h, \$1595. OR 1-0536.

APTS., 5 units, 4 1-bdrm., 1 single, 8-yrs-old, hardwood floors, aarbaae disposals, aaraaes, glass enc. tubs, elec. wall heaters in bath, panel heat in living rooms, North Hollywood area. \$32,950; Ford Custom 300 sedan, 1957, 2-tone areen, r/h, \$625. ST 4-0676 after 6 p.m.

BABY BED, w/mattress, \$15. OR 7-7714 after 4:30 p.m.

BICYCLE, 10-spd., Allegro, accessories inc., cost \$200, \$75. OR 1-0265.

DINING ROOM FURNITURE, table, 6 chairs, china cabinet, natural finish birchwood, chairs upholstered, \$175. OW 1-5698.

MONKEY, 3-yrs-old, loves people, Rhesus specie, w/wood house, \$35. PL 8-5464.

TRAILER, teardrop type, sleeps 2, mattress, stove, ice box, good tires, plenty of storage space. \$125. OS 6-6390.

MG, 1955 TF-1500, \$950. 279-1826.

BABY CRIB, 30x54, \$20; infant's seat. \$3. TE 1-6567.

MERCURY TURNPIKE CRUISER, 1957, power steering, brakes, seats, windows, good tires, clean interior, \$995; pickup, 1941 International, good tires, \$225. OS 9-2771.

TRAILER, utility, 4'x6' metal body, \$50. EA 2-5136.

T-BIRD, 1955, 1957 chromed engine, Ford-A-Matic, chrome rims & new tires, r/h, tonneau cover, \$1500. OS 6-9874.

GOLF CART, Rocket deluxe, cost \$17, \$8; print drier, elec., 12"x15", single surface & extras, \$5; light fixture, rustic, from Rossmore Home, \$10. GE 1-4233.

CADILLAC, 1953, Coupe De Ville, cont. kit, full power, \$325. 398-9874.

SHOES, size 6 1/2 med., lady's, very good condition, \$4. 675-7231.

ALLSTATE MO-PED, 1959 mod., \$100. FR 1-0431.

## FOR SALE

DIVAN & CHAIR, \$40; ironer, Speed Queen, \$45. DA 9-1062.

CADILLAC, 1955, r/h, power brakes & steering, GM factory air conditioner, \$1075. OR 3-1539.

THUNDERBIRD, 1955, power brakes, windows, steering & seats, \$1400. DA 3-7290.

OLDSMOBILE, 1951, 3-spd. trans., Ansen linkage, 4-bbl. carb., 303 cu. in. engine, \$99; saxophone, Conn, E flat alto, cost \$275. \$200. OS 6-5634.

POWER TETRODES, amperex-type 6156/4-250A, \$15; RCA 5D22/4-250A, \$17.50; both removed from Johnson K.W., modified to 4-400As. OR 2-6056 after 6 p.m.

BEDROOM SUITE, 5-pc., modern blonde walnut, double bed, 2 large twin dressers, w/hanging mirrors, box springs & mattress, 2 night stands, \$98.50. OR 7-5721.

CAR RADIO, Motorola, transistor, 6 volt, 1-yr-old, \$15. OR 2-2075.

PLYMOUTH, sedan, 1948, needs light work, good transportation car, \$35. OS 5-7969.

SHOTGUN, Remington, model 58, 12 ga., 2 barrels, 1 30" full, 1 26" imp. cyl., both w/vent rib, \$155. PL 6-0015.

UTILITY TRAILER, 48x72x40 High box, tires like new, licensed, \$75. 371-6775.

ARROW BOW, Recurve, 30-lb. pull, \$7.50. FR 5-6095.

CAMPERETTE, Dart, sleeps 3, 50-lb. ice box, fits on top of car, stored at 13707 Crenshaw Blvd., \$195. Box 1601.

WASHER, 1956 Bendix Duomatic, gas driver, \$35. FR 5-5838.

CHORD ORGAN, Performa 40 bass, cost \$75, \$40. FA 0-2862.

DISHWASHER, \$125. 831-6973.

BUICK, 1955, pearl white, chrome rims, record player, Vibronic, new tires, rugs, white Nauqahyde interior, \$550. NE 1-0858.

BOAT, 1961 Hiawatha, 14' Fiberglass, 12 hp Hiawatha motor, trailer, tank, cushions, \$450. 325-3452.

WASHING MACHINE, automatic, GE, good condition, \$50. PL 6-0768.

FAN, 20", 3-spd., GE, \$18; 4 glass bricks, 12"x12"x3", usable for shelf, \$10; chest of drawers, \$22; Formica table, 2'x4', \$15; heater, elec., Westinghouse, \$10. OR 2-2362.

REFRIGERATORS, Philco & Servel, operable condition, \$50 ea. OR 2-5578 after 5 p.m.

TRAILER, 1960 Arrowhead, 15', 1300-lb., sleeps 4 or 5, \$800; sewing machine, treadle-type, antique, \$10. OS 5-1347.

## WANTED TO BUY

BANDSAW, w/motor, for woodworking; also portable router, skill saw, PO 9-1372.

FILING CABINET, metal, 2 or 3 drawer & good condition, DA 9-5537.

RECORD PLAYER, 3-spd., portable, in good condition, PL 2-0979 after 5:30 p.m.

## FOR TRADE

WASHING MACHINE, Whirlpool Imperial, automatic, will trade for .22 rifle, clip-type, or mini bike. UN 4-7673.

## FREE (to be given away)

FREE DIRT, top soil, OS 6-5921.

KITTENS, 3, part angora, 1 male, 2 females, OS 5-6081.

## RENTALS OFFERED

APT., 2-bdrm., large, deluxe, unfurn., built-ins, carpets & drapes, trash pickup paid, laundry facilities, close to shopping & Northrop, \$120 mo. SP 2-1992.

APT., 1 & 2 bdrm., w/w carpets, drapes, stove & ref., walk-in closet, washer, private patio, aaraae storage, sundeck, park, \$90 & \$110 mo. OR 3-4244.

APTS., deluxe, 2-bdrm., w/w carpets, drapes, built-ins, aaraae, disposal, soft water, storage space, utility room, sun deck, \$110 mo. OS 5-7719.

APT., 1-bdrm., unfurn., modern, w/pool, \$90 mo. & up. DA 9-1517.

HOUSE, near beach, 2-bdrm., unfurn., fireplace, aaraae, small yard, near bus, stores & laundries, \$125 mo. on lease. FR 4-8757.

## FOUND

GLASSES, 2-pr., prescription, at Northrop Security, Ext. 2181.

## PERSONALS

YOUR KIND expressions of sympathy are deeply appreciated and gratefully acknowledged. LOUISE L. HUDSON.

## FOR SALE OR TRADE

SAILBOAT, 19' Gloucester Dory, sleeps 2, Watts dacron sails, spruce mast w/stainless rigging, 2 layers Fiberglass on hull, 5 hp outboard, all Coast Guard equipment, needs paint & minor repairs but very sound, \$400 or trade for interesting old or foreign car. OR 1-0923.

HOUSE, \$11,500 or trade for home in South Bay area or Orange County of comparable value. Box 1602.

## Old-Fashioned Picnic, August 26



**PICNIC, PICNIC**—This is the type of fun to be expected by all Norair personnel who attend the NRC Second Annual Old-Fashioned Family picnic coming up on Sunday, August 26. The picnic location is South Gate Park. Here, at last year's edition, we see Dan O'Halloran, chief, Quality Control, contesting with daughter Maureen in a no-hands apple turnover game. If readers do a double take they will see someone is fudging in photo, namely Mr. O'Halloran himself. What about the right hand, sir? Features this year as reported by Dave Carney, NRC president, are detailed below.

## Be an NRC Bowler, Leagues Now Forming

By Commissioners Corinne Davis, ladies; and Bill Myerson, men

If you are interested in enrolling in the bowling program, now is the time to act.

Winter leagues are forming and this year, for your convenience, we are offering a variety of 12 leagues bowling on Monday, Tuesday, Wednesday, and Thursday starting at 6:15 p.m. in 5 different bowling establishments: Del Mar, Missile, Tropicana, Gardena, and Rose Lanes.

The winter season begins September 9 and continues through the second week of April. Deadline for accepting entry forms is September 3.

The cost of bowling is dependent upon the amount of the prize fund, generally runs about \$2.50 to \$2.75 a person and is collected the night of league play.

To sign up for a league, secure an entry form, which includes all particulars, from Personnel Activities or from your commissioner. Don't miss out in the fun. Start forming a team in your department and join a bowling league.

The advantages of bowling in an NRC sponsored league are in-

numerable. Mainly, it affords you the opportunity to make new Northrop friends and secondly it provides you with the opportunity to exercise those inactive muscles and enjoy yourself while doing it. No matter what your age, sex, or ability, there is a league suited for you.

For beginners, we offer mixed handicap leagues and for those who are more proficient, we have mixed and men's scratch leagues.

Northrop employees and their families are welcome to participate. Grandpa and grandma are also welcome as well as the boy friends or girl friends of Northrop personnel.

The advantages of bowling in an NRC sponsored league are in-

## NEXT NRC GOLF TOURNEY SLATED FOR OJAI; BURTON WINS AT LAKES

The next NRC golf tournament will be held at Ojai. Date is August 4.

Tee off time will be at 7:30 a.m. Reservations are now available at Personnel Activities. Cost is \$6.50 with a limit of 100 golfers.

The NRC Whispering Lakes golf tournament held on July 22 was won by Leonard Burton with an overall low gross of 70.

Overall low net went to Bob Ehlert with a 68.

First flight was a tie between

Ken Wood and Mike Craig with 69.

Second flight was a tie between Frank Sullivan, Joe Castricone, Bert Osterberg, and Joe Seman with 71.

Third flight was also a tie between Ken Clayton, commissioner; Glenn Brewster, and Bill Robusch with a score of 69.

Fourth flight winner was Ken Wells with 69.

## FUN FEATURES AT NRC PICNIC

Features for the Second Annual Old-Fashioned Family Picnic to be held August 26 at South Gate Park, as reported by NRC Prexy Dave Carney, include:

Championship all-star softball game between Norair and Nortronics.

Free ice cream, punch, coffee, cotton candy, balloons for the children.

Games galore—bingo for parents and grandpa, all types of races for children, pie eating contests, special prizes to game winners, balloon throwing.

There will be a golf tournament.

The swimming pool will be open.

Pack a basket lunch.

## Northrop Norair News

VOL. 20

NO. 16

1001 E. Broadway, Hawthorne, Calif.

A NORTHROP CORPORATION  
PUBLICATION  
NORAIR DIVISION

Published every other Wednesday

CHARLES BRADFORD, Editor

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# Northrop Norair News

Issued biweekly by Norair Division of Northrop Corporation

Wednesday, August 15, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, EL PASO

## New Benefit Schedules at Norair Announced by Nolan

Increased pay scales and additional benefits for Northrop Norair personnel were announced last week by Corporate Vice-president and Division General Manager Dick Nolan.

The increases were put into effect August 1.

"Management has been studying for some time a number of possible ways in which our Company could improve the benefits which our people receive. Our study has reached the point where most of these improvements can now be put into effect.

"Having made these determinations, we see no reason to delay your benefits pending completion of the negotiations we

have read and heard about elsewhere in the aerospace industry. As always, Northrop benefits will be maintained in such a way as to compare favorably with those which may prevail elsewhere in our industry," Mr. Nolan stated.

Highlights of the new benefits:

Hourly rated personnel in factory and in office and technical rate structures are increased from 5 to 8 cents an hour, depending on grade. The increase will be effective retroactive to May 28, 1962. First checks containing the raises will be those distributed on August 24. Retroactive checks will

(Continued on Page 4)

## T-38, a Clean Airplane, Acceptance Flights Show

The T-38 is a clean airplane. This is continually being borne out by acceptance flight facts as deliveries to the Air Training Command mount at Palmdale.

Jack Mannion, manager, Manufacturing, reveals that as of December, just six months ago, the average was 4.83 Company flights required for each customer acceptance. This figure, now in July, stands at 2.16. Furthermore six months ago, Air Force acceptance pilots from the Plant Representative's office were flying every ship. They now fly only one airplane out of three.

"And these flights are actually

combination 'Company' and Air Force flights," stated Air Force Plant Representative Colonel Charles W. Clark. "in the sense that we either fly a regular production flight or accompany one of your pilots as they put the airplane through its acceptance paces. This is spot checking, or random sampling. With the airplane as clean as it is, there is no need for special Air Force piloted surveillance flights with the added taxpayer expense involved.

"When Norair Palmdale crew chiefs say the airplane is ready, and your pilots fly it and give it

(Continued on Page 2)

## Freedom Bond Winner



**LUCKY LADY** — Northrop Corporation President Thomas V. Jones, presents \$500 Savings Bond award to Juanita Newman, bond solicitor at Nortronics ES&E. Juanita, an organization clerk won the handsome Company-sponsored prize at a drawing held at the end of the Freedom Bond campaign. At right, Marie Tully, campaign solicitor coordinator, and Charles Boyle, Freedom Bond campaign chairman. May drive for added Savings Bond purchases produced participation increases throughout the entire Corporation. Gains registered as high as 25 per cent—Precision Products, Norwood, Mass. Norair gain was 20.6 per cent.

## Company Right on Course, A Big Year Coming Up

INTEGRITY MOST IMPORTANT TO SUCCESS, SAYS JONES

"Integrity above all is the most important element of success.

"A road map is not enough. You must have a compass.

"Give the customer what he needs. Give him more than he asks for."

Northrop Corporation President Thomas V. Jones, in his Friday night address before the Northrop Management Club stressed these points in reporting that, in spite of heavy competition and military budget curtailments, the Company "has been right on course for the past three years."

Northrop Space Laboratories

is a highly significant element in the Corporate organization, he stated. "The nation's space program will move forward as fast as the economy will allow. We intend to be prime contractors for space vehicles. Our ability to design, tool, our know-how in recovery and landing, make our position very strong."

Mr. Jones spoke before a packed house at the Management Club's August meeting held at the Thunderbird International. His previous appearance had been six months earlier just before the yearend holiday.

He was joined at the head table by Dick Nolan, Corporate

vice-president and Northrop Norair general manager. Other guests from the Corporate office included Dr. William F. Ballhaus, executive vice-president; Robert R. Miller, senior vice-president; William Larrabee, vice-president, Legal; and George Gore, secretary and assistant corporation counsel.

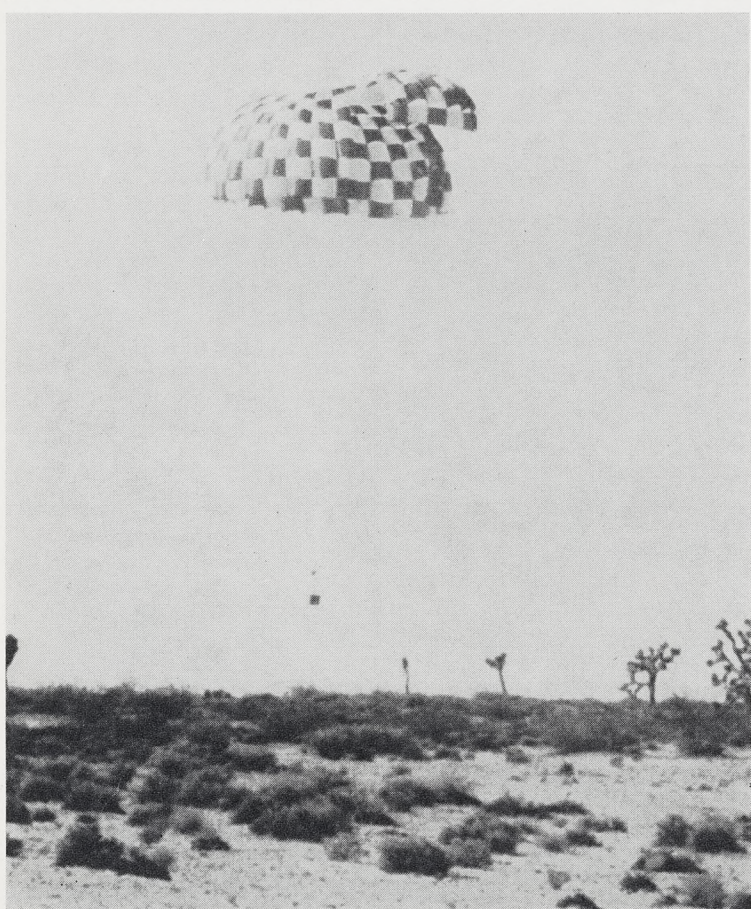
Mr. Jones recalled that Northrop's insistence on flexibility with the ability to change direction rapidly, and to apply the advanced technologies in obtaining simpler low cost solutions to the nation's defense requirements had proved to be right. "We also had to prove that we were good managers and good designers and responsible producers and further, to produce in a reliable fashion.

"Policies arrived at three years ago proved to be correct," he stated. "We were on the right track. We had to push hard. Every person responded . . . Our lightweight family of aircraft and advanced versions will be in service around the world within ten years."

Mr. Jones said prospects for space vehicles, VTOL, and missiles look very good.

Mr. Jones outlined important points as fundamental to aero-

(Continued on Page 2)



**STEERABLE**—Descending to earth during a recent test drop, the Northrop Ventura Glidesail controlled descent landing system displays the capability of steering its payload to a selected landing site.

## Northrop Developing Steerable Parachute

A steerable parachute capable of being guided both in direction and angle of glide is being developed by the Ventura Division of Northrop Corporation for the National Aeronautics and Space Administration's Manned Spacecraft Center, Houston, Texas.

Known as the "Glidesail" controlled-descent landing system, the new type of parachute is suitable as a personnel parachute in small sizes and will also be adaptable for use in manned space vehicles now under development by NASA. The parachute is con-

trolled by the pilot and is capable of executing 360 degree turns and of shifting from a gliding to a vertical descent within seconds.

The new Glidesail parachute was derived from Northrop Ventura's famous Ringsail parachutes which are used to return America's Project Mercury astronauts safely from their space missions. The Glidesail design will enable future astronauts to control spacecraft during descent and to land in pre-selected areas free of hazard to vehicle and passengers.



# PASSPORT TO DIGNITY

By John B. Clark

What's in a badge? Never thought much about it—that inch and three quarter disc that identifies me as a Northrop man; a bit of a nuisance sometimes, especially when it is left home on the dresser instead of where it should be, prominently displayed on my manly chest for all to see. When Mrs. "Pete" Stock-

hospital bills. Made it possible for me to get some needed surgery done. And now that I am back on my feet it will go a long way in getting the boys through school. Paul, our older boy, is headed for El Camino. Ed junior is still in grade school.

"Right from the start my badge helped Millie and me get

"Passport to Dignity", by John B. Clark, director, Industrial Relations and Security, is the first of a series under his byline on the everyday Northrop scene. Mr. Clark is a 22-year man. He has been eyewitness and a participant in every major Company event . . . He has served in the positions of personnel interviewer and supervisor, Personnel Activities, and at one time, 1944 through 1947, he was editor of the Northrop Norair News. He has held his directorship for the past 15 years and is a dean in the aerospace industrial relations field. In relating past incidents and in telling about people and things, especially Northrop, Mr. Clark has no peer.

well, Plant Protection receptionist in the Industrial Relations lobby is satisfied it is where it should be, she buzzes the buzzer, opening the portal to my daily effort.

Come to think of it, I always



JOHN B. CLARK

considered my badge as something nice to have—what with my name on it and all. I can remember "when" the Northrop badge, like at most plants in those days, carried only numbers. But to our enduring pride, Northrop was the first large west coast company to recognize the individual with his name spelled out on his badge for all to see. Here, indeed, was a Northrop "first" that pleased us all—made it easier to know the other fellow by name.

But, beyond that, I never gave the badge much thought—that is, until one day last week.

I had a visitor—a gentleman returning from a long leave of absence. Ed had been in the hospital for quite a spell. After the usual "Glad to be back" and "Glad to have you back", Ed with some feeling told me what his badge has meant to him over his long years of service.

"Johnnie," he said, "I consider my Northrop badge to be a kind of 'Passport to Dignity'. It has meant more to me than meets the eye. It has helped me put bread in the mouths of my kids since I was hired back in 1944. It put the new room on my home in 1953 when Ed junior was born. (Millie likes to call him our Northrop baby.) Then when I was laid low, this badge took care of a heap of my

relocated in Hawthorne. We came to California from the East, you know (got a job at Northrop right off), and we soon found that local stores liked to do business with the folks from the big plant on Prairie. It gave us a feeling of welcome.

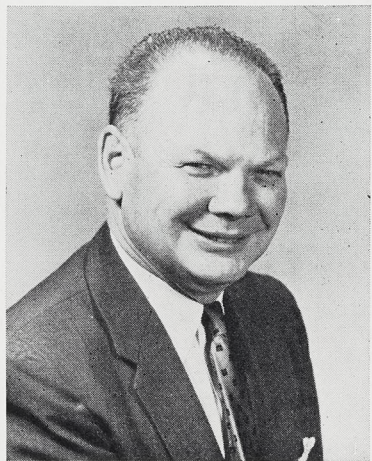
"But, maybe more important, this badge reminds me of the contribution made in getting the 'Black Widow', the F-89 and now the T-38 in the air. I am just one among many but I like to think that doing the best I can, along with a lot of others, gets the job done. I'm sure glad to be back."

Then the gentleman left. I thought to myself—which of us got the most out of that meeting? My remark "glad to have you back" though sincere now seemed so inadequate.

It has been said that "work is life and good work is good life". Ed is but "one among many" who has given real meaning to that statement.

## Hypersonic Specialist To Norair

Kermit Van Every has joined Northrop Corporation as Technical assistant to Welko E. Gasich, vice-president and assistant gen-



KERMIT VAN EVERY

eral manager, Technical, Norair Division.

Mr. Van Every has had extensive training and experience in the aerospace industry, particularly in aerodynamics and the problems of hypersonic flight. He

## Perfect Northrop Norair Record



**NEVER LATE, NEVER ABSENT**—Dymtro Kordan, utility man in Salvage, receives congratulations from his good friends and well-wishers on eve of his retirement. Bon Voyage photo shows on divan, Lawry Puder, general foreman, Plant Maintenance; Mr. Kordan; and Norair Vice-president and Assistant General Manager, Operations, Bob Lloyd; and Jack Mannion, manager, Manufacturing, at right, in Mr. Lloyd's Plant Four office. Mr. Kordan was 67 and a 15-year man when he retired. Stated his boss, Claire Ray, foreman, Building Service and Salvage, "Dymtro was the most willing worker I ever saw and I think his never late, never absent record for 15 years tops them all." Good hunting and fishing from all Norair to Mr. Kordan.

## Jones Address

(Continued from Page 1)

space industry success.

To maintain Company direction, you must have a compass. A "road map" is not enough.

Integrity above all.

Keep costs down.

We must be willing to lose if we intend to win.

We must have belief in ourselves, in our ability to do a good job.

If errors are made, admit the

error and be willing to ask for help in correcting the mistake.

Desire of the entire organization to give the customer what he needs.

Give the customer a better product than he asked for.

Teamwork.

Mr. Jones reported excellent prospects for the LFC X-21 aircraft project. "LFC is something the nation needs," he stated. He described LFC as providing a

long endurance airplane capable of flying very great distances without stopping. A virtual manned station in the air, LFC will implement the national policy of maintaining a flexible deterrent force. Such equipment assists America to choose her own battlefields.

In commenting on other Divisions, Mr. Jones highlighted Nortronics by saying that the GAM 87 is now progressing from research and development toward production. Northrop Ventura, is fit organizationally, he said, and possesses high capability in many space fields such as recovery and landing of orbital objects.

Page Communications has operations in 27 countries throughout the world. He related that one Page contract now in force in the Orient got under way within the space of one evening.

Nortronics departments in Boston, Precision Products and Marine Equipment, are doing well. They are succeeding in a highly competitive field.

Northrop Architectural Systems, a combine of Acme Metal Molding, Arcadia Metal Products, and Pacific Curtainwall—Their products grace the finest and most beautiful buildings to be seen. They continue to move forward. Their progress is excellent all the way.

Mr. Jones was given a fine ovation. After conclusion of the formal portion of his address, Management Club President Al Binsacca opened the meeting for queries from the floor.

Mr. Jones responded to an un-diminishing flow of questions for 20 minutes as he gave added insight on Company affairs.

## Flights Per Buy

(Continued from Page 1)

their okay we consider the product ready for operational use. It is good economics and the airplane has earned this confidence."

Air Force flight spot checking will continue on the one-out-of-three level, it was stated. This frequency being considered adequate.

Colonel Clark also went on record in saying that credit for the outstanding quality and malfunction free condition of the trainers as they come off the line is due to the fine effort of the Hawthorne assembly and Palmdale Final and Flight organizations. "An outstanding example of team cooperation," he said.

After the trainers are accepted

has served as a consultant to AGARD, the NATO Advisory Group for Aeronautical Research and Development and on numerous sub-committees of the National Advisory Committee for Aeronautics.

For 23 years prior to joining Northrop, Mr. Van Every was associated with Douglas Aircraft Company, where his most recent assignment was chief, Technical Sections, at the company's Aircraft Division in Long Beach, California.

Mr. Van Every received a bachelor's degree and a degree of aeronautical engineer at Stanford University.

and flown to ATC bases, they are subjected to additional flight scrutiny from Colonel Clark's office, usually for a period of several weeks.

"We want to see how they hold up in everyday base use," said Captain Everett Seath, Air Force Quality Control Division chief. "We want to make sure that they are not just 'show-room floor' clean, but clean all through." Captain Seath has closely checked every airplane delivered to Williams AFB and every airplane has performed as it should.

Tom McCracken, Palmdale base administrator is naturally proud of the 2.16 flights per acceptance showing. A Scot, and conservative, and with many manufacturing years experience, he indulges in a smile but topped by a slight frown when discussing the record. "We will do better yet," he stated. "Our goal is 1.5 flights per acceptance flight. We hope to reach this figure in September. Eventually it will be a flat one flight per acceptance. Mark my word."

Major Jim Anthony, deputy Air Force plant representative, agrees. "This is possible. If Tom says he is going to do it, he will do it."

Palmdale and Edwards crew chiefs are key men in the success of any airplane project whether it be development or production acceptances. The Northrop Norair News has scheduled a pictorial feature for the next issue in tribute to their dedication to the success of the T-38 and the N-156 projects.

**Northrop Norair News**

VOL. 20

NO. 17

1001 E. Broadway, Hawthorne, Calif.

A NORTHROP CORPORATION

PUBLICATION

NORAIR DIVISION

Published every other Wednesday

CHARLES BRADFORD, Editor

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**RIDES WANTED**

**7:30 a.m. — 4:15 p.m.**

HYDE PARK & WEST BLVD., Inglewood.  
Donald R. Gates, ext. 1305, OR 1-3283.

PALOS VERDES BLVD. & SEPULVEDA,  
Torrance, Robert H. Gibson, ext. 2336,  
FR 1-9578.

**8 a.m. — 4:45 p.m.**

PACIFIC COAST HWY. & LONGFELLOW,  
Hermosa Beach, Val Tracy, ext. 25, 26,  
FR 2-6044.

LENNOX & HAWTHORNE, Inglewood,  
Donald E. Bromlow, ext. 481.

CARSON ST. & PALO VERDE AVE.,  
Lakewood, Ron Lieberman, ext. 408, 409,  
HA 9-6332.

**3:45 p.m. — 12:15 a.m.**

AIRPORT BLVD. & ARBOR VITAE, Los  
Angeles, Florence Plutko, 674-6433.

ARTESIA & PIONEER, Artesia, Q. L.  
Sines, tie line 481, ext. 38, 39.

**RIDES OFFERED**

**7 a.m. — 3:45 p.m.**

HAWTHORNE & LENNOX, Inglewood.  
Will pick up passenger around Hawthorne & Lennox area & Lennox & Prairie area. Geraldine Holloway, ext. 2170.

**7:30 a.m. — 4:15 p.m.**

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Donald R. Gates, ext. 1305, OR 1-3283.

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Lakewood, Ron Lieberman, ext. 408, 409,  
HA 9-6332.

**BBSF Classified Ads**

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

**FOR SALE**

TICKETS, 2, worth \$8 apiece for Seattle World's Fair, for various rides & admissions, \$4 ea.; surfboard, Yater, 9'3"x21", \$95. TE 1-6233.

STATION WAGON, 1958 Mercury Voyager, 9-pass., 4-dr., h/top, r/h, air conditioned, full power, \$1495. DA 9-8960.

TRUMPET, w/case, good condition, \$100; Hi fi record player, portable, many top jazz albums incl., \$100. PL 4-0078.

SAILBOAT, Sabot, cotton sails, oars & locks, \$175; desk, wooden, 3-dwr., school teacher-type, \$10. FR 5-5139.

HOUSE, 3-bdrm., w/w carpeting & drapes, glass enc. patio, near Imperial & Van Ness. \$20,500. 757-5095.

REFRIGERATOR, Frigidaire, deluxe, 11 cu. ft., 3-vrs.-old, \$100. AX 5-5290.

SECTIONAL, 3-pc., washable cover, \$45; Extendo-matic table & 4 chairs, \$60; southern-flavored gumwood furniture: bookcases, corner-type, \$15; 3 end tables, \$5 ea.; coffee table, \$10; headboard, \$20; 2 4-dwr. chests \$20 ea. GE 1-8028.

PLYMOUTH, 1950, 4-dr., r/h, good transportation car. \$75. OR 3-4056.

DINING ROOM SET, hard rock cherry maple, ladder back chairs, \$45. PL 4-0078.

COMET, S-22, 1961, 17,000 miles, r/h, auto, trans., \$1800. UN 5-4042.

POODLES, AKC, toy, females, 10-wks.-old, \$50-\$125. DA 9-9293.

BEDROOM SUITE, 7-pc., blonde, \$55. OS 9-3868.

MANTEL CLOCK, General Electric w/ Westminster chimes, mahogany finish, \$25; silverware, sterling silver, service for 8 w/extra pieces, plain pattern, made in Holland, \$100; serving dishes, silver plated, 3, \$7 ea.; gold earrings w/small diamond in center, \$20; shoes 2 pr. Lane Bryant, size 8EE, 1 white 1 dark red, \$10. OS 6-3886.

MICROMETER, 0 to 1", Brown & Sharpe, satin finish, lock, hardened points, \$15. PL 5-3365.

REFRIGERATOR, large, Servel, aas, in good running condition. \$25. OS 6-1574.

RIFLE, FN Mauser .270, w/scope, case, cartridges, sling, recoil pad & adjust trigger, cost \$275. \$175. EX 4-2077.

SLOOP, 20' Gaff, keel, sleeps 2 inside 2 cockpit, head, full equip., good Catalina cruiser, sloop B-7, Kina Harbor \$3150. FR 5-9740.

**FOR SALE**

KITCHEN STOVE, clean, \$50; motorcycle, 40 cu. in. BSA twin, \$500. OS 5-6286.  
HOUSE, deluxe, 3-bdrm., lge. kitchen, built-ins, disposal, din. rm., fireplace in living rm., w/w carpeting, drapes, plumb. for soft water, sliding glass dr. to cov. patio, h/wood floors, weather stripped & alum. screens, dbl. det. garage, in North Long Beach, \$17,500. GA 3-2261.

DISHWASHER, Lady Kenmore, cost \$186.16, used 4 months. \$95. TE 3-9862.  
CORVAIR MONZA, 1961, auto, trans., r/h, w/w, 11,500 mi., red, \$1895. OR 4-4537.

CAMERA, Bolex 8mm, turret lens, Dedici triaer handle, regular lens, Yvar 13mm, F1.8, wide angle, Pizan 5.5mm, F1.9; telephoto, Yvar 36mm, F2.8, 2-vrs.-old, \$225. OR 4-1424.

SHOTGUN, model 20 Higgins 12 ga. pump, adjustable choke w/vent-rib walnut stock, rubber recoil pad, gun case, \$80; crib, Edison, double drop sides, teething rail, neutral color, mattress, Kantwet, 2 1/2-vrs.-old, \$30. OS 6-9593.

REFRIGERATOR, Philco, 13 cu. ft., defroster, 100-lb. freezer, eeg, butter, juice compartments, \$200. DA 3-5497.

RIFLE, Remington 30-06, semi-automatic, model 742, \$110. FR 5-6364.

AIR CONDITIONER, Fedders 3/4 ton, \$85; deep freeze, 15.2 Coolerator, \$50; bicycle, men's, \$15; dog house, redwood, \$15. OS 6-2162.

LAWNMOWERS, 1 reel-type, 1 rotary, \$50. \$15; stoves, 2, 10-vrs.-old, O'Keefe & Merritt & Gaffers & Sattler, \$50, \$10. OR 2-5578.

CHEVROLET, 1953, 4-dr., h/top, blue & white, Powerglide transmission, needs work original owner, \$150. FR 5-9347.

CHEVROLET, convert., 1947, has 1953 Chevrolet truck engine, aood, r/h, new top, \$150. NE 9-3825 between 10 a.m. & 2 p.m.

WELDING EQUIPMENT, oxy. acet. tanks, \$109; iet pumas, \$92.50; canning jars \$1 a doz.; tractor, Case, disc & scraper, \$500; sprinkler heads, Rainbird, \$2 ea. VE 7-4237.

HOME, 3-bdrm., 1 1/2 baths carpeting, drapes, covered patio, cash down to 4 1/2 % GI loan or submit down for conventional financing. \$20,500. FR 1-1308.

LOT, in Palmdale, 75'x300', adjacent to Palmdale Blvd. on 25th Street, close to new shopping center, lights & water in \$3000. TE 4-8948.

TELEVISION, 24", mahogany console, Silverstone, \$150. FR 1-4233.

MOVIE PROJECTOR, Technicolor Magi-cartridge automatic 8mm, w/leather carrying case, \$50. OR 2-5306.

REFRIGERATOR, Coldspot, motor unit 3-vrs.-old, \$30. FR 2-5461.

HOUSE, 2-bdrm. & den, 1 1/2 baths, fireplace, dbl. garage w/radio opr. door, corner lot, E. Compton, \$21,500. NE 5-2447.

SURFBOARD, Lyman, 9'6", 2" balsa Rumer, orange pigment, \$80. 371-8907.

FORMAL, floor-length, size 9, white w/green, \$20. DA 3-1921.

CHINA CLOSET, corner-type w/glass doors & maple finish, \$15. 372-4324 after 4:15 p.m.

TIRES, 4, aood, used, recap., 8.00x14, \$8 apiece. FR 2-7655.

**WANTED TO BUY**

WHEELCHAIR, in aood condition, OS 6-3090.

WHEELBARROW, contractor's-type, TE 1-4949.

**FOR TRADE**

FORD PICKUP BOX, 8', 1948, trade for short pickup box. FR 4-2915.

METAL DRAFTING MACHINE SCALES, new, trade for plastic scales. OS 5-2797.

**FREE (to be given away)**

WIRE PEN, suitable for chickens, turkeys, pheasants, portable. OS 6-5253.

**RENTALS OFFERED**

APTS., 2-bdrm., unfurn., w/w carpets, drapes, built-in stoves, near El Camino College, \$115 mo. DA 3-6231.

APT., large, 1-bdrm., furn., clean, bright & deluxe, Hermosa Beach location, just 1 block to the ocean, \$120 mo. 376-7361.

HOUSE, 2-bdrm., 2 children OK, no pets, Lawndale, Torrance area, \$85. 371-6775.

APT., 2-bdrm., unfurn., 3 mi. from Norair, adults only, available approx 8-26-62, \$90 mo. DA 4-5086.

HOUSE, 2-bdrm., unfurn., disposal, near Northrop, bus line & shopping center, \$90 mo. OS 5-9695.

APT., 2-bdrm., w/w carpets, built-ins, aarbaae disposal, drapes, garage, 1/4 blk from Hawthorne Blvd., \$100 mo OS 5-8988.

**RENTALS WANTED**

GARAGE, 1-car size, for storage of furniture, in Hawthorne or Gardena area, 676-8625.

**PERSONALS**

TRANSPORTATION to Indianapolis, leaving end of August via Route 66, arrive on or before September 3, will take one. TE 1-4778.

# NRC PICNIC STRESSES FUN FARE

A repeat from last issue.  
Features for the Second Annual Old-Fashioned Family Picnic to be held August 26 at South Gate Park, as reported by NRC Prexy Dave Carney, include:

## CATALINA NEXT FOR TRAVEL CLUB

A holiday at Santa Catalina is on tap for the NRC Travel Club September 7, 8, and 9, it is announced by Howard Cornelius, NRC commissioner.

The outing will consist of a round trip on the SS Catalina, two nights at the Saint Catherine Hotel which includes a Saturday night buffet dinner and dancing at the Casino Ballroom.

Only 60 reservations are available. These are based on double occupancy, states Howard. Reservations should be made at Personnel Activities.

Cost per person is \$27.50.

## WIERK WINS AT OJAI-CIRCLE R NEXT TOURNEY

The NRC Golf Club has reserved the Circle R Ranch golf course for a club tournament September 8, it is announced.

The Circle R is located eight miles north of Escondido on Highway 395. A guest house is available which will accommodate 40 people.

There are complete dining facilities plus a swimming pool. Overnight reservations can be made by calling direct to the Circle R, Mrs. Reynolds, SHerwood 5-8029.

Start of the tournament is 7:30 a.m. with a limit of 100 golfers. Green fees are \$3.50 plus 50 cents prize fund for a total of \$4.

Entry fees are payable at Personnel Activities.

The scores for the Ojai tournament are in. Paul Wierk took the overall low gross with a 77.

Low net was won by William Carlberg, a 65.

First flight went to Mac McLarney with a 67.

Second flight went to Jim Quick with a 68.

Third flight, a tie between Arnold Nelson, Walt Brown, and Dan Casson for a score of 70 even.

Fourth flight was won by NRC President Dave Carney with a 70.

Fifth flight went to Hank Solak with a 69.

prizes to game winners, balloon throwing.

There will be a golf tournament.

The swimming and wading pools will be open.

Pack a basket lunch.

Directions to South Gate Park: Off Atlantic Avenue between Firestone Boulevard and Imperial Highway. Address is 4900 Southern Avenue, South Gate.

## Winter Kegling Deadline Near--Leagues Listed

Entry deadline for the NRC day shift winter bowling season

## NEW NRC CLUBS—TRAIL HIKERS, WEIGHT BUFFS

Two new NRC clubs are in the planning stages. Packers and hikers and a competitive weight lifting club. No names yet.

The packers and hikers will specialize in footwork following mountain and desert trails into the vast reaches of the Sierras and the Basin and Range Province.

Gordon Madison, acting commissioner of the club states that the club's program will be designed for outdoorsmen, fishermen, and nature lovers. "We will pack back into the tall timber fishing the streams and lakes as we go. This club will like to rough it," states Gordon.

Although it is short notice, an eight-day 42-mile circle trip on the John Muir Trail is being planned for the first week in September. Preliminary investigation reports are already in but Gordon would like prospective members to get together for discussion and briefings. All those interested should call Personnel Activities, extension 2784, and ask to be placed on the NRC Club's mailing list.

The weight lifting club will be unique in that it will not necessarily be a body building program, it is stated by Don Greco, Personnel Activities. It will be strictly a competitive team-type recreation. An experienced competitive weight lifter is available to demonstrate the intricacies of this exciting pastime.

Call Personnel Activities to be placed on this new club's mailing list.

is drawing nigh, it is reported by Commissioners Bill Myerson and Corinne Davis.

Absolute deadline, state Bill and Corinne, is September 3.

To sign up for a league obtain entry forms at Personnel Activities office, Organization 1245, Zone 12. For general winter season bowling information call Don Greco, extension 2784.

A list of the various leagues follows:

Mixed 5 handicap, 750 maximum, Tropicana, 6:25 p.m., Monday.

Mixed 5 handicap, maximum to be set, Roselanes, 6:25 p.m., Monday.

Men's 850 scratch, Missile, 6:15 p.m., Tuesday.

Mixed 765 scratch, Del Mar, 6:25 p.m., Tuesday.

Mixed 5 handicap, Tropicana, 6:25 p.m., Tuesday.

Men's 825 scratch, Tropicana, 6:25 p.m., Wednesday.

Mixed 5 handicap, 760 maximum, Missile, 6:15 p.m., Wednesday.

Men's 5 handicap, 800 maximum, Del Mar, 6:25 p.m., Wednesday.

Four hundred and ninety-five scratch trio, Del Mar, 4:30 p.m., Thursday.

Mixed 5 handicap, 750 maximum, Missile, 6:15 p.m., Thursday.

Mixed 4, approximately 650 scratch, Gardena, 6:25 p.m., Thursday.

Men's 5 handicap, (ding bat), Del Mar, 6:25 p.m., Thursday.

These leagues will begin rolling the first two weeks in September. Beginners are welcome, it is emphasized by Commissioners Myerson and Davis.

## What to Expect at the Picnic



**THE NRC ANNUAL OLD-FASHIONED FAMILY PICNIC** — Such an outing can be strenuous as evidenced by the wheelbarrow race, a highlight last year. This year's picnic is set for August 26 at South Gate Park. Northrop Recreation Club's planning will provide a complete activity agenda with emphasis on fun.



## Dinner at Eight



**HONORED**—"In recognition of his contributions and outstanding performance in promoting higher standards within the purchasing and sales profession". A plaque bearing the foregoing inscription was presented to Charles Murray, Norair Purchasing agent, following his address before a recent Garrett Corporation sales seminar. Mr. Murray keyed his talk with the statement, "Personal conduct, thorough product knowledge, company history, and a knowledge of Norair requirements are equally important in presenting sales information in minimum of time. The most valuable salesman will follow-up on his orders, introduce new trends, and be dependable with a quality product at an equitable price." Garrett has asked for and received permission to publish Mr. Murray's talk in the McGraw-Hill Publication "Industrial Distribution".

## Additional Benefits

(Continued from Page 1)

**be issued on or before August 31.**

Retirement plan vesting provisions are due to be increased. Presently, Northrop people, 45 years old with 10 years service, have a vested interest and receive retirement income at 65, even though they might terminate prior to this age. A new plan which will provide 100 per cent vesting at 15 years continuous service with no age requirement is being formulated. Effective date will be announced soon.

**Health insurance for retirees has also been established. The plan is voluntary with one half of the cost being borne by the Company, the employee paying the other half. Employee cost will be \$4.68 a month for himself. If wife is included, the Company will pay half of her premiums also, making a total employee cost of \$9.35 a month for man and wife.**

The maximum lifetime coverage under the new plan is \$5000, which may however be reduced by major medical claims paid during the employee's working years. In no case will the coverage be less than \$2500. Complete details are available by calling the Insurance office on extension 2586.

Group insurance benefits have been increased all along the line. Hospital room payment coverage for employee, dependents, and in the major medical area are up an average of \$4 a day.

Major medical maximum is increased from \$5000 to \$10,000.

Accidental death and dismemberment insurance is liberalized for new employees.

Additional insurance benefits are provided for permanently assigned out-of-state personnel.

An additional "floating holiday" has been added. Floating holidays will be applied this year to the Friday after Thanksgiving and to the Monday before Christmas.

Cost-of-living adjustments continue. Effective August 6, the allowance was six cents an hour. During the past ten years, a total of 31 cents an hour has been added to hourly rates as a result of COL adjustments, Mr. Nolan said.

Pay increases for salaried personnel resulting from the recent Salaried Performance Reviews became effective on July 30. The maxima of the ranges and classifications of all salaried exempt and nonexempt were increased by 3 per cent on July 16. Individual salary increases at Norair are based on demonstrated merit. The increase represents an improvement in the potential of each salaried position.

**HERE ARE**—Mana Daley, secretary to Dick Funkhauser and Morrie Plotkin, Corporate Development Planning; Marguerite Dougherty—Dr. V. W. Howard, vice-president and manager, NSL Systems Engineering; Marian Hodges—George Mangurian, manager, NSL Applications Engineering and Planning; Rocky Barnum—Dr. Ludwig Roth, vice-president and manager, NSL Research; Ila Brock—R. M. McNamara, manager, Norair Contracts and Services; Jan Tyler—Welko Gasich, vice-president and assistant general manager, Norair Technical; Ginny Kirk—Vic Anderson and Mel Petersen, Corporate Development Planning.



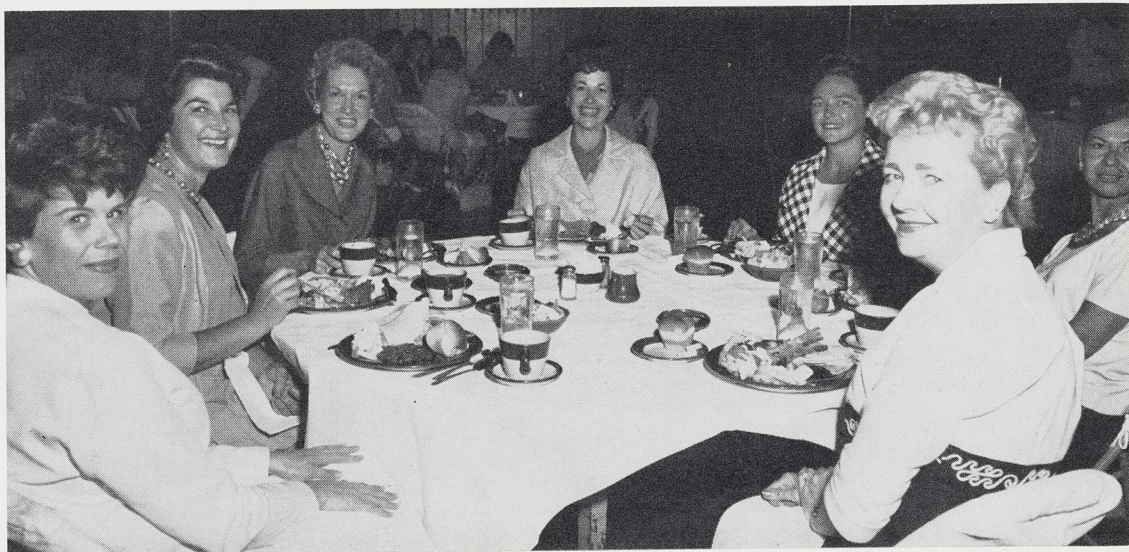
**SUMMERTIME IS ANNUAL TIME**—for secretaries' get together. Informal dinner recently held at Fox Hills Country Club shows from left, Naomi VaNouse, secretary to T. L. McCarthy, manager, Norair Administration; Rori Nordhausen, secretary—Bill Gillotti, Norair Administration; Si Davis—Ray Harvey, assistant to Corporate vice-president, Customer Relations; Deedee Berry — Richard E. Horner, Corporate senior vice-president and NSL general manager; Evelyn Purpus—Northrop Corporation President Thomas V. Jones; "P-J" Everts — Joe Corie, Corporate comptroller; Dorothy Moore—Dick Nolan, Corporate vice-president and Norair general manager.



**THIS HAPPY GROUP**—is composed of Marian Wallace, secretary to Dr. W. F. Ballhaus, Corporate executive vice-president; Edna Parker — D. L. Lewis, Nortronics treasurer; Betty Linton, receptionist, Administration Building; Marie McCabe—J. G. Macdonnell, Norair treasurer; Jeri Lippert—Bob Lloyd, Norair vice-president and assistant general manager, Operations; Mayme Colombo—Jack Mannion, manager, Norair Manufacturing and Materiel; Bobbie Wirthman—Al Morgan, NSL vice-president and manager, Business Administration.



**SMILING SIXSOME**—From left, Evelyn Long, secretary to John R. Alison, Corporate vice-president, Customer Relations; Pat Carlberg—Paul Wierk, director, Norair Technical Administration; Joan Olson — Milt Kuska, Norair deputy assistant general manager, Technical; Margaret Boles, Corporate Public Relations; Laura Coonradt—Roy Jackson, NSL vice-president and assistant general manager; and Mattie Lee Sherburne—Max Stanley, chief, Norair Flight Support Operations.







# Northrop Norair News

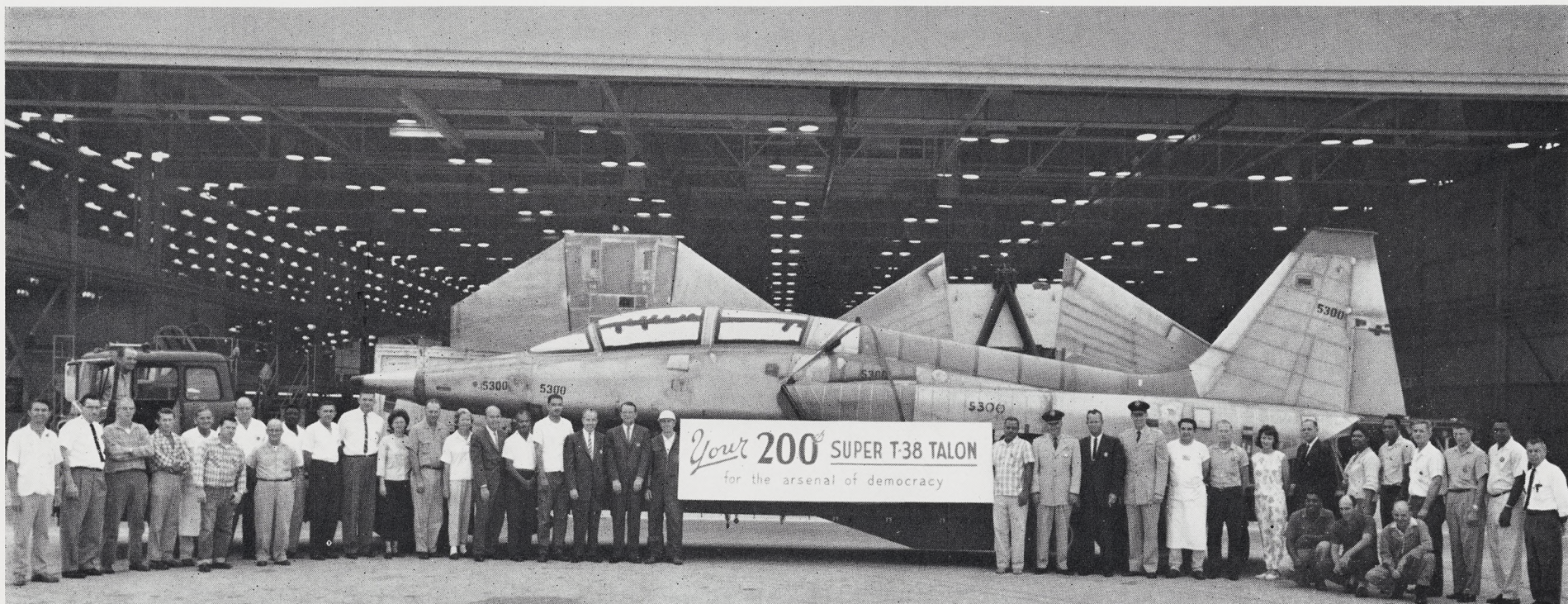
Issued biweekly by Norair Division of Northrop Corporation

Wednesday, August 29, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, EL PASO

## T-38 Milestone—200th Airplane to Palmdale



**TWO HUNDREDTH T-38**—Out Assembly door on schedule Airplane 5300 gets the honor of being production milestone. Division officials, Air Force Office representatives and assembly personnel gather to wish God speed to the little trainer, soon to be flying in the Air Training Command. Dick Nolan, Corporate vice-president and Norair general manager and Major Jim Anthony, deputy Air Force plant representative officiated. From left are Frank Andrecheck, Barney Taylor, foreman; L. E. Gunsalus, J. E. Fisher, Donald Morrison, T. H. Pascoe, E. C. Shipp, Raymond Johnson, M. C. Lawton, E. R. Marsh, B. D. Marshall, foreman; Mary Von

Flotow, H. M. Zabriskie, Juliette Cuiper, O. P. Omley, director, Production Operations; M. Montez, W. R. Weaver, Jack Mannion, manager, Manufacturing; Mr. Nolan, G. E. Orcutt, C. L. Graham, Major Anthony, Bob Lloyd, Corporate vice-president and assistant general manager, Operations; Captain Earl E. Hallum, T-38/F-5A Project officer; Paul Lucero, Warren Von Gruenigan, Janet Opatz, A. R. Carr, superintendent; Virginia Luke, L. Jackson, L. E. Perkins, G. E. Gill, B. E. Davis, V. R. Higgins, foreman. From left, kneeling, O. E. Love, R. C. Evrist, and Phil Ferris. In truck cab, truck driver A. D. Dye.

## NEWS BRIEFS

**THE CUSTOMER VIEW**—Objective survey on how others— aerospace major and prime contractors and the government—see us, is subject of study project by Long Range Planning. Walt Fellers, director, Morwick Ross of that section with help of L. C. Breckenridge—Norair Dayton senior representative—in Air Force areas, is preparing a report for management review. Stated Dick Nolan, Corporate vice-president and Norair general manager, "It is Division policy when competing for contracts to be sincere, realistic and severely competitive and to back up our proposals with total Norair effort. A long record of suitability, quality, high degree of reliability, performance that exceeds specifications, low cost, and on schedule deliveries, stands behind our every commitment. We therefore take the view that each proposal should result in winning a contract. Those proposals that failed to materialize in more business are the subject of this fact finding effort. They will be analyzed carefully in order to pinpoint shortcomings and to determine the reason why."

**GRADUATE STUDY PROGRAM**—Northrop Corporation has established an all-divisions program whereby personnel engaged in job-related graduate study for masters or doctorate degrees, will be paid for academic time off the job if attending classes leading to their goal. Details of the program are available in S.P.P. 2-7.5, or by calling the office of Dr. Vernon Sheblak, Norair chief, Management Development and Industrial Training, extension 2437. Normal tuition and laboratory fees incurred will also be reimbursed through provisions of the Educational Refund Plan. It is felt that the Graduate Study program will be of significant benefit to scholars where schedules of required classes conflict with their plant working hours. Individual award limit for one semester a year is 8 hours a week; for two full semesters, 4 hours a week. Maximum yearly award is 156 hours.

**TO THE ACADEMY**—Northrop team composed of Corporate Senior Vice-president and Northrop Space Laboratories General Manager Dick Horner; Dick Nolan, Corporate vice-president and Norair general manager; Fred Stevens, Corporate vice-president and Nortronics general manager; Bob Gates, manager, Norair Marketing; and Dr. William Ellet, chief, Nortronics Divisional Marketing Research, recently attended a symposium on "Ballistic Missile and Space Technology" sponsored by the USAF and under the auspices of the Aerospace Corporation, at the Air Force Academy, Colorado Springs . . . The invitation to participate was extended by Lt. General Howell M. Estes, commander for Space Systems Division, Air Force Systems Command . . . The meeting, which served to study aerospace directions for the next several years, was attended by high ranking people in industry, including company presidents, members of top management and key company planners.

## "F-5A" OFFICIAL DESIGNATION FOR NEW NORTHROP FIGHTER

The U.S. Air Force has assigned the military type designation F-5A to the new Northrop supersonic jet fighter recently chosen as the fighter replacement aircraft for selected countries under the Military Assistance Program.

The new MAP fighter, referred to as the FX by Military Assistance Program planners, was known as the Northrop N-156 during its development. The Air Force designation of F-5A was assigned under the recently adopted DOD uniform aircraft designation system.

Contract negotiations for the F-5A are nearing completion between the USAF and Northrop Corporation. First deliveries of the F-5A will be made approximately 14 months after production go-ahead. It will be produced by Norair Division, Hawthorne.

The T-38 Talon trainer version is currently in production at

Northrop and in service with the USAF Air Training Command. Both T-38 and the F-5A are members of the low weight, high performance family developed by Northrop.

The F-5A is a multi-mission, supersonic fighter capable of

penetrating hostile territory with 5000 pounds of air-to-ground and air-to-air weapons or an equal weight of reconnaissance and surveillance equipment.

The new MAP fighter is not dependent on concrete runways  
(Continued on Page 4)

## News Awarded Bronze Medal by California State Fair

The Northrop Norair News has won the bronze medal for the "top story of the year" in industrial publications by the California State Fair and Exposition.

The award was for "Lunar Beachhead" under the byline of Aerospace Reporter and published in October of last year. It told of the important work California scientists are doing to advance America's efforts to land human beings on the moon. The story covered in detail research being done at Northrop Space Laboratories by Scientists R. R. Berlot, head, Planetary Physics and Chemistry Lab, and Dr. Emanuel Azmon, geologist in the same organization.

The medal will be presented to the News by Hale Champion, director of Finance, at a press, television, and radio banquet to be held in Sacramento Saturday, September 1.

This is the third high-ranking State honor won by the News. The "Public Service" award has

been granted twice, once for "A Preview of Antelope Valley" which explored the impact of the aerospace age on a California community and for "A Tower in the Plain" the story of the Strategic Air Command, missile weaponry and the new breed of military man, the "missileer" with a backdrop setting of California industry.

"Lunar Beachhead" proved to be a very popular article. The News had a "sell out" for that issue. Numerous schools and colleges led by California State Polytechnic College and El Camino Junior College, requested the issue for classroom student use.

Calls are still received occasionally, although the customary holdback copies have been depleted to the vanishing point.

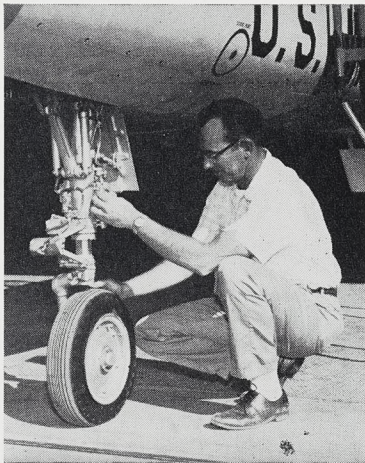
The Northrop Norair News in its 20-year history has won over 50 first place honors for editorial excellence, plus over a hundred other awards for service to its readers in the defense effort.





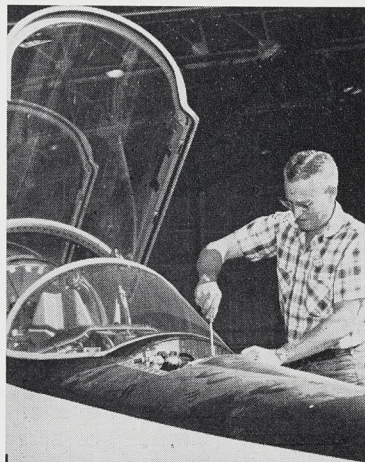
## NORTHROP T-38 TALON TRAINER

... to fly men high and fast and far.



**MONTE MONTGOMERY Edwards**

With Northrop for 12 years. Crew chief for 10 years. Started at Alamogordo on the Snark. Was at LAX on Snark guidance; at Indian Springs on the F-89J and the Genie; to Germany and France on the T-38. Jackie Cochran's crew chief; demonstration tours to Colorado Springs, Washington, Dayton, Pensacola, Corpus Christi . . . Has studied Spanish, is studying German. Has his own technical library. Self-schooled in the liberal arts.



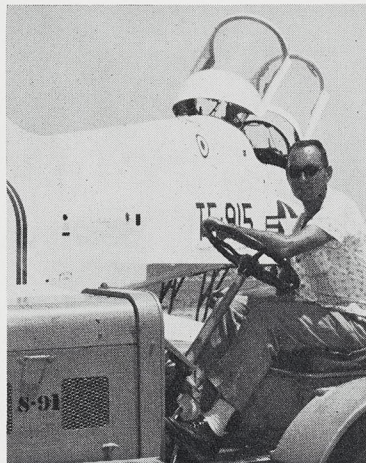
**D. D. "SMOKEY" WILSON Edwards**

With Northrop for 20 years. A crew chief since 1951. Worked on the X-4s, B-35s, C-125s, F-89s A through J; on the Genie preflighting; T-38s. On Washington demonstration tour; first chief to ride in the T-38 — with General "Millie" Millikan. Jackie Cochran's crew chief on her first solo airplane; day crew chief on Time-to-Climb. Has had Company training in engines, electrical, supervisory classes.



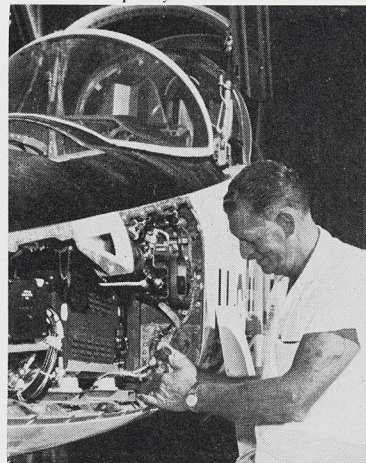
**ORVILLE "DUDE" MARTIN Edwards**

With Northrop for 22 years. Crew chief for 3 years. His first job was riveter on the N3-PB. Has been at Edwards for 10 years. Was at Indian Springs with the F-89J and the Genie. Was on a 6-month demonstration tour with the F-5A fighter . . . Has continued his schooling in Palmdale. He and his son received high school diplomas at the same time. He is now studying English, mathematics, and electrical sciences at Antelope Valley College.



**DEAN ZOLLINGER Palmdale**

With Northrop for 18 years. Crew chief for 6 years; pre-flight, engine run, compass swing, and LOX. Started with Northrop on the United Airlines C-47 contract converting these planes to VIP plush. Worked as crew chief on the F-89 and F-101 tow reel projects; also, flight line mechanic and crew chief at Palmdale and Hawthorne. Worked in Process Lab; on the Wings; on the C-125; on the Company bamboo fleet.



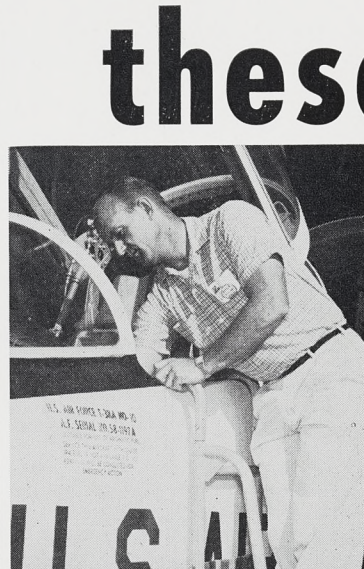
**LOUIE BAKER Edwards**

With Northrop for 22 years. Field and Service Electrical crew chief. Started with Northrop way back when in Electrical Maintenance. Has worked on the P-61 Black Widow, RB-49, F-89 Y through H, F-5A, and T-38. Was on the Washington RB-49 speed flight ground crew—3 hours and 25 minutes coast-to-coast; on the Time-to-Climb project. Is an ex-president of the NRC — Number 3; ex-NRC vice-president at Muroc.



**DON McPHERSON Palmdale**

With Northrop for 22 years. Crew chief for 7 years; pre-flight, fuel flow, and engine run. First job as a riveter on the N3-PB. Worked on experimental projects including Chance Vought landing flap and the prone fighter. Worked on the P-61, F-15, F-89, the Wings, and T-38 . . . One son is in Germany with the Air Force and one works at North American.



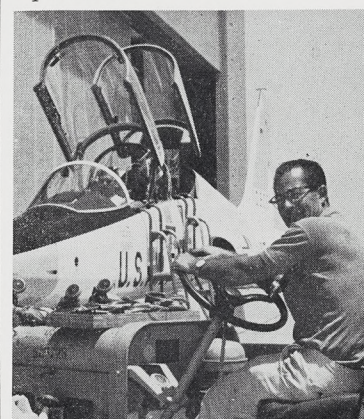
**MILT ROGERS Edwards**

With Northrop for 11 years. Crew chief for 4 years. Was chief on the B-57 and the F-101 for tow reel support and F-89 firing. Has been at Edwards for the past 9 years. His first Northrop job was at Alamogordo on the B-45 in support of the Snark project, then to Patrick. Was with the T-38 that flew Astronauts Carpenter and Grissom at Houston. T-38 demonstration tours to Jacksonville, Yuma, Fort Worth, Colorado Springs, Eglin, and Pensacola.



**ERNIE KANE Edwards**

With Northrop for 21 years. Crew chief 11 years. Went to work in aerospace back in 1939 with Douglas Aircraft as an engine mechanic. Has been on demonstration tours with the T-38, F-5A. Was a crew chief on the F-89 Scorpion; a final assembly leadman on the B-35s and '49s; and was assistant foreman in the Engine department.



**C. W. "CHUCK" SMITH Palmdale**

With Northrop for 13 years. Crew chief for 8 years; production flight, 262 inspection and delivery. First Northrop job was Inspection leadman on the Ontario Scorpion project. Was at Edwards on the 5104 flight program; on the European tour to Paris and Germany with the T-38. Before Northrop was with North American as experimental flight mechanic, and assistant foreman.



# men must say okay...

The crew chief is to the airplane as the trainer is to the boxer.

They are a team. They have a special language. They are sympathetic, in tune. The airplane with all the cunning of her design, in her strength and in her beauty, is a willing and responsive thing, and her mission in life is to serve, to fly men high and fast and far.

The crew chief serves her in this duty and he is a very special man. The touch of his hand can mean life or death to her. It must always mean life.

Norair has 18 crew chiefs at Palmdale and Edwards. They are the men that must say okay. This pictorial is in their honor. What is a crew chief and what are the things that distinguish him?

In the first place he must love his airplane and must be jealous of her. He is a fighter, a hard man where his airplane is involved. But he must have tenderness in him, and patience. He must be thorough. He must be dedicated.

The average service of Northrop Norair crew chiefs stands at 17 years. If you are one this much service means that like as not there will be grey in your hair and this is all right. For the man who says okay is a man of judgment and balance and serenity. His emotions are tempered by experience and by sacrifice for a lot of the things that are common and everyday for other men are out of the ken of the crew chief breed, for he has his airplane and she comes first. Before family, before fireside. Even his personality must wait.

Pick your hour of the day or night. Three a.m. in the chill darkness before dawn you will find them engrossed and intent in tending the maiden T-38, or in the 1 p.m. on a 100-degree day with the sunlight on the hangar doors as sharp and as bright as splintered quartz, so intense it hurts the eyeballs. Tools gleam quietly. Hands are as sure as those of surgeons. Adjusting pressure valves, safetying a castellated nut, chasing the circuits, running the engines in that closed world a man lives in with earphones clamped tight against the jet engine roar.

Eventually, when the time comes, when things are finished and ready and everything is precision correct, this man must make the sign okay.

Inspection takes an all-important last look to "buy" the chief's work and to enter the airplane on the books as ready for her mission. Flight dispatchers settle down to their radio consoles to "read" her every move while aloft. This, as they say, is the moment of truth.

As the airplane blasts into the sky, leaping under the hand of the pilot, the crew chief stands and watches, and listens—and smiles.

Almost every Norair crew chief "grew up" with airplanes. They worked on the V-72, the N3-PB, the '56 all-mag airplane, the Wings, the stuttering stove-pipe, the Black Widow, the F-15, the prone fighter, the '89. They started in sheet metal, in subassembly, in hydraulics. Some were "hot rodders" when they were kids. One even ran a restaurant before aerospace. "But that wasn't for me."

They participated in the Northrop "firsts". Some worked on what we know as the first jet airplane to fly, a Northrop rocket airplane powered by monoethylaniline and red fuming nitric acid, an historic but little-known event.

There are always two stages in a crew chief man's life—before he achieved his goal, and after. The goal is a double one, the "desert" and his chieftancy.

"Margo and I have four kids and five acres," says Louie Baker, Edwards.

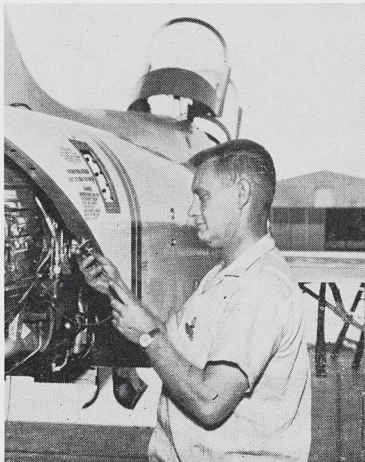
"I've been in aircraft for 23 years," said Harold Crawford from Palmdale.

"I caught the biggest fish in NRC history," says Edwards' Smokey Wilson.

"Convict Lake is 200 miles away, but it's a straight road."

"I've been to Europe with the T-38," says Palmdale's Chuck Smith.

"I have a son with the Air Force in Germany," said Don McPherson, Palmdale.



**CHRIS SOIHL**  
Edwards

With Northrop for 13 years. Crew chief 3 years, specializes in engines. Is a Northrop Aeronautical Institute grad. First job at Northrop was assembler and rigger. Was a member of the F-89 Genie team at Alamogordo working on flight techniques on how to fire the bomb and get away. Was at Indian Springs; on the T-38s beginning with the first airplane; to Paris and Germany on the demonstration tour; was on Time-to-Climb project.



**PAUL MINOLETTI**  
Palmdale

With Northrop for 20 years plus. Preflight crew chief, compass swing, LOX, and safety inspection. First Northrop job was in subassembly on the V-72 Vengeance dive bomber; worked on the P-61 Black Widow night fighter; the Flying Wings—B-35s and B-49s; the F-15 Reporter which was a photo-recon modification of the Black Widow; and the F-89 Scorpion A through J.



**CHARLEY HERRERA**  
Edwards

With Northrop for 20 years. Crew chief 10 years. Started as a trainee in old Department 7 on the V-72; structures mechanic on the B-49; worked on the United Airlines and Boeing contracts; was fuel tank repairman on the F-89 and the first Northrop man qualified on the self-sealers by Goodyear Rubber Company. Worked on the F-89 A through D; was first crew chief on the F-5A; was at Randolph in the ATC indoctrination program.



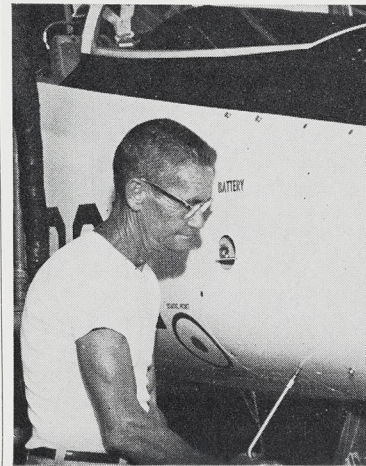
**DAVE HOGARTH**  
Palmdale

With Northrop for total 21 years. Crew chief 15 years; production flight, Company and Air Force acceptance. First job at Northrop was structures mechanic trainee. Was leadman in Departments 18, 53, and 15; crew chief in Department 19 and crew chief and assistant foreman in 5519 at Palmdale. Has also been flight test instrumentation technician at Lockheed Palmdale and for Convair at Edwards.



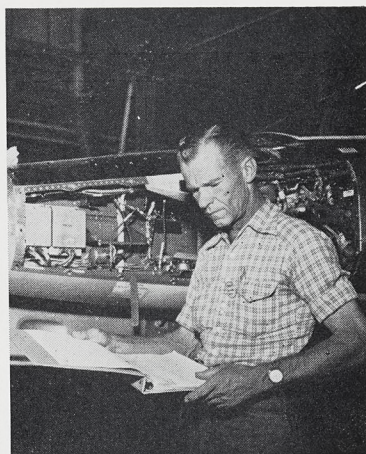
**CLAUD TAGGART**  
Palmdale

With Northrop 6 years. A crew chief for 2 years; production flight, Company and Air Force acceptance. First job at Northrop was flight line electrician. Also served as flight line mechanic and acting crew chief, F-89. Before Northrop was flight line electrician with Hughes; an instrument mechanic with Lockheed; an electronic mechanic with Bendix.



**RAY BEVANS**  
Palmdale

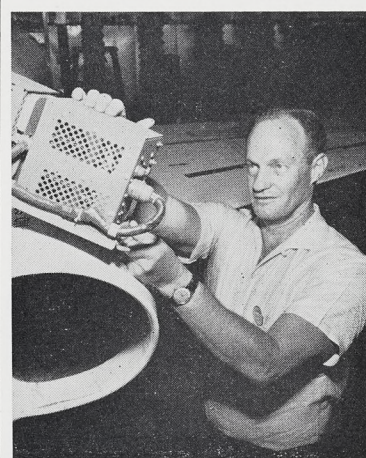
With Northrop since 1942. Crew chief 2 years; production flight, Company and Air Force acceptance. First job at Northrop on the V-72 final line. Worked on the P-61 and the F-89. Has been final assembly mechanic; final assembly leadman; experimental flight mechanic on the T-38 at Edwards. Before Northrop was owner of his own garage.



**NORMAN WILSON**  
Edwards

With Northrop 20 years. Crew chief since 1953.

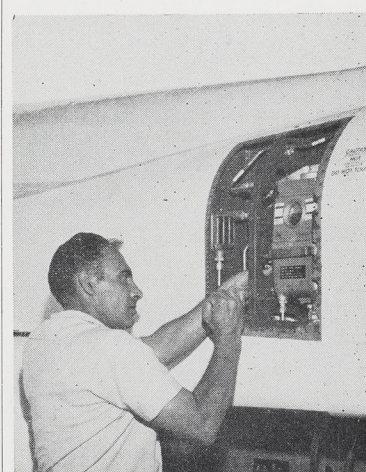
First Northrop job was on the V-72. Worked in Department 13, first Northrop experimental organization on the P-61. Worked on the B-35. Was Scorpion crew chief at Edwards; is now on the T-38 mod program. Before Northrop, served in the U.S. Army at Ft. Sam Houston three years, 1937 to 1940. . . . Hometown is Littlerock, California and lives there now.



**ERNIE GREEN**  
Edwards

With Northrop for 15 years. Crew chief for 1 year.

Has served Northrop as experimental flight mechanic and master mechanic in 5515 and 5520. Before Northrop was with Douglas El Segundo for four years advancing from riveter to leadman. . . . Attended Antelope Valley Junior College for two years. He is working toward his Associate Arts degree. Was with the Army Paratroops in 1944 to 1946, ETO.



**HAROLD CRAWFORD**  
Palmdale

With Northrop for total of 18 years. Crew chief 10 years.

First job at Northrop in Black Widow installation of hydraulics on P-61 mockup; worked on the C-125, X-4, and F-89s. Has had more than 23 years in aerospace. Before Northrop was with Douglas. Worked on DC-3, B-19, DC-5, and the SBPDs and the Boeing B-17. Attained the rank of assistant supervisor.





## RIDES WANTED

7 a.m. — 3:45 p.m.

BROADWAY &amp; 120TH ST., Hawthorne. Kathryn A. Russell, ext. 469, OS 6-4536.

GOULD LANE &amp; PACIFIC COAST HWY., Hermosa Beach. Charles Wilkinson, ext. 1209.

7:30 a.m. — 4:15 p.m.

MAGNOLIA &amp; WARDLOW RD., Lona Beach. Gail Stroh, ext. 1458, GA 4-4891.

LOMITA BLVD. &amp; PENNSYLVANIA, Lomita. Need only a ride home. Edith W. Richards, ext. 2591. 2592. 325-1625.

MARKET &amp; ATLANTIC, Lona Beach. Mary Price, ext. 1222. 423-1978.

8 a.m. — 4:45 p.m.

VERMONT &amp; ARTESIA BLVD., Gardena. John J. Tourino, ext. 1665. 1666. 324-1016.

CENTURY &amp; HAWTHORNE BLVD., Inglewood. Mollie Meiorowitz, ext. 1837, OR 2-3643.

3:45 p.m. — 12:15 a.m.

AIRPORT BLVD. &amp; ARBOR VITAE, Los Angeles. Florence Plutko, ext. 1508. OR 4-6433.

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

TELEVISION SET, Magnavox, 21", \$40. FR 5-9985.

BICYCLE, Schwinn Continental, 1-yr-old, candy apple red, cost \$100 \$65. OS 9-3580.

TRUCK &amp; CAMPER, 1961 3/4-ton Chevrolet, 4-spd., w/10" Romer camper, eavittv \$2000. bal. \$1300. FR 4-7732. A

TRAILER, 1960 Arrowhead, 15', 1300-lb., sleeps 4 or 5, \$800; sewing machine. treadle-type, antique, \$10. OS 5-1347.

BABY CRIB &amp; MATTRESS, 30x54, \$20; infant's seat, \$3; maternity clothes, variety of outfits, approx. \$5 ea. TE 1-6567.

CHRYSLER station wagon, 1951, 4-dr., r/h, automatic trans., power brakes &amp; steering leather upholstery. \$250; washing machine, GE, fully automatic, 3-yr-old, \$50. PL 6-0768.

FREEZER, Amana, extra large, 22 cu. ft., chest-type, cost \$700. \$350. Box 1801.

MICROMETERS, 0-to-1". Lufkin &amp; Starrett; gauges, 8 ball-type Hale, 3/8 to 1/2, 1/4 to 3/8, 3/16 to 1/4, &amp; 1/4 to 3/16; 2 Starrett telescope Hale gauges, lock-in \$15. PL 4-0817 after 4:30 p.m.

BOAT, 16' Cruizon, plywood, glassed hull, 78" beam &amp; deep freeboard, mahogany decking &amp; seats, 30 hp Evinrude w/2 props, large wheel trailer, custom made snap-on boat &amp; motor cover, convert. top, 2 6-gal. tanks, Sea Scoop bait tank, batt. &amp; trickle charger, fire ext., lights, anchor &amp; rope, speedometer, 3 life jackets, 4 cushions &amp; 2 paddles. \$895. terms. DA 9-0431.

RIFLE, 30.06 Remington, Model 760. Gamemaster pump, swivels, sling &amp; case incl., \$90. DA 4-5342.

CHEVROLET PICKUP TRUCK, 1960, 6-cyl., 1/4-ton, shortbed stepside, step bumper, r/h. 14,500 miles. \$1295. FR 5-0915.

FOAM SURFBOARD, 8'2". \$50. FR 6-2700.

STENOGRAPH MACHINE, \$65; ironer, Horton portable, \$15; hedge clipper, elec., used 2 months, cost \$40, \$25. OS 6-8842.

HOME, 3-bdrm., in North Redondo Beach, 5-yr.-old, on corner lot, fireplace, open beam ceiling, fenced backyard, hardwood floors, natural wood cabinets, 220 wired, aarb. disposal, other extras. \$15,500. FR 2-3125, after 5 p.m.

SURFBOARD, Velzy, 8'x21"x2", pintail, blue color. \$45. FR 5-2920.

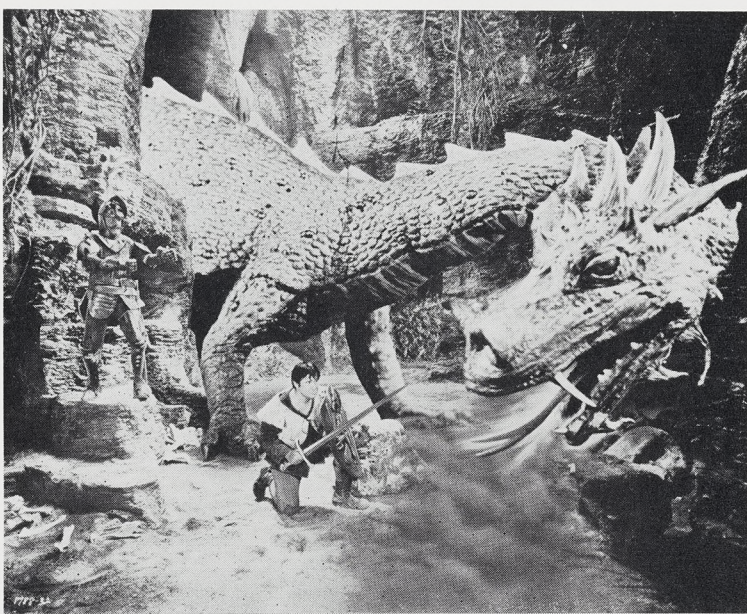
WASHING MACHINE, 1958 GE, \$20; movie camera &amp; projector, Keystone. \$85; end tables &amp; coffee table, blonde w/black trim, \$15; Evinrude motor, 7 hp. \$50. DA 4-6203.

CHEVROLET, 1953 4-dr. sedan, new paint &amp; motor, stick shift, \$250; doa house, large, factory-built, redwood. \$15. DA 9-9464.

RILEY, black &amp; metallic grey, 1951. 2 1/2-litre, 4-dr. sedan, mechanical condition &amp; bodywork good, \$895. 375-0449.

MANGLE, small-size GE console, white. \$30; bicycle, girl's 26" wheels, \$20. FR 5-8335.

## Brothers Grimm



**CINERAMA SPECIAL** — "The Wonderful World of the Brothers Grimm" will be shown exclusively for Northrop personnel Sunday, September 30. Get special reduced rate tickets now advises Personnel Activities. Place is Warner Brothers Theatre, 6433 Hollywood Boulevard. Time will be 2 p.m. Wonderful World promises to out Cinerama all other Cinemas and tickets will be at a premium for many months to come. Photo shows Buddy Hackett as he tackles village-eating dragon in Mr. Dragon's lair. Again—special Northrop showing on September 30. Get tickets at Personnel Activities.

## FOR SALE

ELECTRIC CAR, ideal for crippled or older person, \$575. OS 9-5922.

HOUSE, 3-bdrm., Westchester, w/w carpeting, custom drapes, tile fireplace, close to schools &amp; shopping, low down payment, \$24,500. OR 4-3591.

REDUCING TABLE, vibratara, silhouette-type. \$65. 371-9730.

INNER SPRING MATTRESS &amp; box spring, twin size, cost \$79.95. \$25 for both. AX 4-0727.

REFRIGERATOR, GE, 11 cu. ft., \$50; speaker system, driftwood finish, ash lowboy, permaflux speakers, \$60. FR 9-5690.

STEREO HI FI EARPHONES, chamoise ear cushions, Navy-type \$9; stereo amplification system, 2 20-watt amps &amp; 2 preamps matched, \$90; stereo recorder, Ampex 1260 4-track, 2-months-old, \$450. FR 7-1043.

PLYMOUTH, 1956, 2-dr, r/h, automatic trans., new tire &amp; paint, excellent running condition. \$450. FR 9-0659, after 5 p.m.

PUPPIES, miniature dachshund, purebred, black &amp; tan, AKC registered, 2 females, \$85. OR 7-6517 after 4 p.m.

CABIN CRUISER, Glasspar Seafair sedan, Evinrude 50 hp outboard, Sun Valley trailer, complete canvas cover, \$1400. FR 7-1074.

HOUSE, 3-bdrm., beautifully landscaped, Hollywood Riviera section, 2 baths, kitchen built-ins, fireplace, drapes, w/w carpets, large 2-car garage, FHA terms, \$29,950. FR 5-7782.

CHEVROLET, 1956 4-dr. station wagon, Townsman, V-8 power pack, auto. trans., r/h. \$595. FR 5-6095.

STOVE, white table top, \$15; roller skates girl's white shoe-type, size 1. \$2.50. DA 4-5391.

OLDSMOBILE, 1954 Super 88 convert., clean, new top, \$470. 676-1028 after 5 p.m.

STAUFFER TABLE, in good condition, \$75. PL 6-7284.

PIANO, Hallett &amp; Davis spinet, excellent condition. \$400. DA 6-7232.

BICYCLE, boy's 26" American made, new spray paint, fenders, chain guard, kick stand, \$20; tether ball, Voit, &amp; pole. \$3. FA 8-3306.

HOUSE, 3-bdrm., fireplace, w/w carpets, drapes, built-ins, 2-car garage, C-B fenced, convenient area, excel. financing. \$17,500. GA 3-2261.

## WANTED TO BUY

REFRIGERATOR, must be a Norair, Coldspot or Friaire, size not important. FR 5-5760.

## FOR TRADE

FISHING TACKLE, poles, reel, tackle boxes, miscellaneous gear, trade for typewriter, encyclopedia, stereo equipment, luaua or? OS 6-5253.

## RENTALS OFFERED

APTS., 2-bdrm., unfurn., w/w carpets, drapes, built-in stoves, \$115 mo.; 1-bdrm., furn., w/w carpets, drapes, built-in stoves. \$110 mo. OS 9-4277.

APTS., furn. or unfurn., 2-bdrm., tile bath &amp; kitchen, built-in ranges, South Bay shopping center, \$87.50 &amp; up. DA 9-9621.

APT., 2-room, living room, kitchen, pullman bath, near beach, Manhattan, business girl, \$55. FR 6-8454.

## RENTALS OFFERED

APT., 2-bdrm., w/w carpet, aarbaga disposal, drapes &amp; built-in stove, near Hawthorne Blvd. 378-7076 after 6 p.m.

APT., 2-bdrm., unfurn., spacious, fenced yard, \$79.50. FR 7-5407.

APT., 3-bdrm., new, carpets, drapes &amp; built-ins, walking distance to Norair, \$160 mo. OS 5-5977.

APT., 2-bdrm., w/w carpets, drapes, all elec. Gold Medallion, radiant heat, thermo-controlled, built-ins, aarbaga disposal, soft water furn., aarbaga w/storage compartment, encl. yard, 1 child OK, no pets. \$120 mo. OR 1-4310.

APT., 1-bdrm., partially furn., w/w carpets, drapes, walk-in closet, washer &amp; dryer, aarbaga storage area, trash pick up pd., 1/2 mile from Northrop, \$95 mo. OS 6-8283 after 3 p.m.

## FOR SALE OR TRADE

FORD, 1957 convert., T-Bird encl., auto. trans., \$975 or trade for 1959 or 1960 Sprite. TE 1-6233.

VALIANT, 1961 2-dr. h/top, white r/h, stick, approx. \$1261 balance, \$200 &amp; take over payments or trade for used car. 428-2173 after 6 p.m.

## FOUND

WEDDING BAND, plain gold, between Plant IV &amp; Engineering Center, contact Plant Security Lost &amp; Found, ext. 1972.

## PERSONALS

ENGINEER, 26, has furn. home near beach to share, \$50 mo. FR 1-2531, after 5:30 p.m.

RETIRED NORTHROP MAN will share nice home with young working man or student, 7-minute drive from Northrop, must furnish A-1 references, cooking privileges, utilities paid, \$15 week. PL 5-9481.

I WISH TO thank NRC &amp; many friends for their kind expressions of sympathy in the loss of my dear brother, Gordon L. Dessen. VI BODDY.

WE WOULD like to express our sincere appreciation for your expressions of sympathy at the loss of our baby, HAROLD LANNOM.

WANT PASSENGERS to share trip to East Coast either Montreal or Boston area. Leaving on Sept. 7 or 8, write in c/o 555 E. El Segundo Blvd., Apt. 7, Hawthorne.

YOUR KINDNESS &amp; sympathy are more deeply appreciated than any words of thanks can ever express. THE FITZPATRICK &amp; ZONA GREEN FAMILIES.

## "F-5A"

(Continued from Page 1)

and huge air bases. Its takeoff weight, with full internal fuel, varies from only 12,000 to 17,000 pounds, depending on the armament load. This light weight, combined with the high power-to-weight ratio of its twin General Electric J-85 jet engines, permits the F-5A to operate from short, unprepared fields in forward battle areas.

## THE GOOD NEIGHBORS

Hawthorne, the "City of Good Neighbors," recently celebrated its 40th anniversary. Fairs, Chamber of Commerce dinners, awards, speeches, all in the good American tradition, highlighted this milestone in our city's progress.

The occasion suggested to an oldtimer a "rubberneck" tour up and down Hawthorne Boulevard and Prairie and adjacent areas with a visit here and there at the new post office, the beautiful new library, the up-to-the-minute air-

By John B. Clark

port, the city hall, the police department, the Memorial Recreation Park, magnificent churches to name but a few.

In the short span of two decades our Fair City has been trans-



formed from a small community to a bustling metropolis. Cities like ours are built by people. The pavements, mortar, and steel girders come in the wake of decisive action put forward by folks with determination and abiding faith in the future.

In all modesty we at Northrop can share a bit of the glory. Thousands upon thousands of Northrop men and women who have come through our lobby day after day over the past 20 years have, in truth, been good neighbors and have, whether residents of the community or not, contributed to the new look in Hawthorne.

The changing pattern in the local skyline is indicative of the part our people have played in the spectacular growth of the city. But, we are not alone. Round and about we see magnificent new industrial facilities, several regional plants of nationally known companies representing a wide variety of products which have in recent years strengthened the economy of our community. Local industries, many of which were thriving here when Northrop first opened its doors, have also enjoyed broad expansion. Collectively, the people who work and live here have brought about the miracle.

At Norair, for instance, Dave Stadler is president of the board of directors of the Hawthorne Community Hospital; Whitey Gillibrand, the Northrop representative at Hawthorne Kiwanis; Charlie Boyle in Rotary; Byron Bonnett, Frank Forve, Don Roberge and Harry Clark—Norair, are active participants in Hawthorne Chamber of Commerce committees; your scribe, a member of the Chamber's board of directors.

The appointments resulted from recommendations made by the Norair-Norair Community Relations Council (Don Ro-

berge, chairman) which was instituted by Jack Mannion and continues with the wholehearted support of Tom McCarthy.

As for the small fry of the community—"Talon" Field located on Company-owned property over Van Ness way, accommodates the Little Leaguers. In this important area of community relations we find several stalwarts such as Bob Luxton from our Maintenance department; Ray Viverka, Engineering Test Lab; Carl Lippon, Wage and Salary; and Sam Sucamele from Paint and Process group.

And, too, the Northrop Recreation Club continues to sponsor both Boy and Girl Scout groups with Bill Wareing of Construction, the commissioner for the boys and Dorothy Walls of Interfacility Control unit for the girls. Northrop also participates in the annual Hawthorne Fair.

Our city today is an example of what can result in a free society from the thinking, planning, and sense of civic responsibility on the part of good people working together. We at Northrop are proud to be numbered in this team of dedicated city officials, churchmen, service clubs, and industrialists.

Good neighbors teamed for progress.

## NORAIR GIVEN COLOR COVER, LEAD ARTICLE

Plant Engineering at Northrop Norair received top grade visibility in the July issue of Plant Engineering magazine. An article by Willard O. Lindstrand, chief, Facilities and Plant Engineering group, titled "Plant Engineering at Norair — Designed for Top Efficiency," is lead story in the issue.

The cover features a full color photo of Mr. Lindstrand with L. H. Puder, general foreman, Plant Maintenance; R. C. "Dick" Dahlman, general supervisor, Facilities Engineering; J. C. "Whitey" Gillibrand, superintendent, Facility Design and Construction; and F. A. Swoboda, supervisor, Facilities Work Control.

## SS CATALINA TICKETS NOW AT P-A OFFICES

Personnel Activities has announced that arrangements have been made for tickets and reservations on the SS Catalina.

Steamship fare round trip is \$7.50. Half fare for children 5 through 11 years of age is \$3.75. Children under 5, free when accompanied by parent or guardian.

For tickets and information on sailing times, moonlight cruises, and special Sunday sailing schedules contact Personnel Activities.

## Northrop Norair News

VOL. 20

NO. 18

1001 E. Broadway, Hawthorne, Calif.  
A NORTHROP CORPORATION  
PUBLICATION  
NORAIR DIVISION

Published every other Wednesday

CHARLES BRADFORD, Editor

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## Briefings on the N-205B Space Trainer



**DISTINGUISHED VISITORS**—Brigadier General Irving L. Branch, commander, Air Force Flight Test Center, Edwards, and Colonel Charles E. Yeager, commandant, USAF Aerospace Research Pilot School, visit Hawthorne for briefings and study preview on the Northrop N-205B space trainer, a look at the X-21, the F-5A, and tour of Norair Division facilities. From left, John R. Alison, Corporate vice-president, Customer Relations; General Branch; E. E. Nickles, director, LFC Aircraft Construction; Colonel Yeager; D. D. Warner, manager, LFC Demonstration.



**AT THE HYPERSONIC WIND TUNNEL**—G. C. Grogan, director, Research and Technologies, explains details of the new research facility's pebble bed heater. Tunnel can attain Mach 14 speeds or simulate altitudes up to 200,000 feet. From left, Mr. Warner, William Frash, director, Aircraft Marketing; Mr. Alison, W. E. Reese, chief, Advanced Aircraft, Marketing; Colonel Yeager, Mr. Grogan, Dick Nolan, Corporate vice-president and Norair general manager; and General Branch. N-205B space trainer design calls for multi-rocket engine power, reaction controls.

## High Honor for the News *Norair Materiel in Nationwide Survey Aimed at Expansion of Supply Sources*



**CALIFORNIA STATE FAIR AWARD**—Northrop Norair News is awarded industrial publications award at California State Fair and Exposition for the Aerospace Reporter story "Lunar Beachhead" published last October. Here Larry Littrell, executive assistant to the director, Industrial Relations and Security, in behalf of the News accepts mounted medal from Hale Champion, State director of Finance. Ceremony took place at Press-Radio-Television Dinner held at Governor's Hall in Sacramento.

A nationwide survey to explore new sources of subcontracting potential has been inaugurated by the Materiel section, and is currently in full swing. The effort is being spearheaded by Earl Rosomme in his capacity as small business liaison officer, and has been primarily organized as a further step in support of the Government's small business program. Special attention is being given to those companies located in labor surplus areas of the country.

The cooperation of Air Force

contract management districts across the nation is making it possible for Northrop buyers to review the capabilities of hundreds of companies from many states.

Carl Hood, director of Materiel states, "While Norair small business participation is one of the highest in the industry, the source expansion program is aimed at further strengthening this position and will effectively add to competitive bidding and cost reduction efforts."

Keen interest in the F-5A pro-

gram is reflected by the volume of inquiries that continue to pour in daily. Input from many new potential sources is being carefully evaluated in the light of present or future requirements and in certain areas, previously unknown capability is being thoroughly explored.

To date, surveys have been conducted by Materiel personnel in Arizona, Alabama, Georgia, Rhode Island, New York, New Jersey, Ohio, Missouri, Oklahoma, Wisconsin, Illinois and

(Continued on Page 2)

## A-F Officials Briefed on Space Trainer

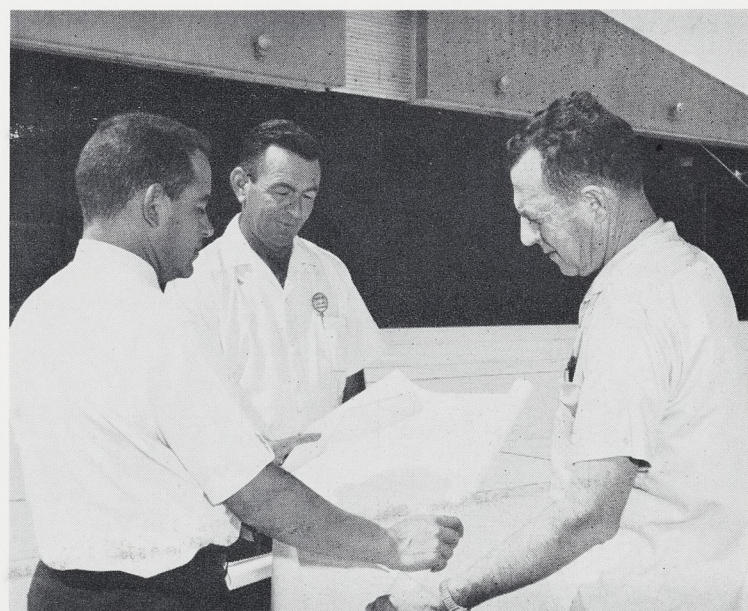
Brigadier General Irving L. Branch, commander, Air Force Flight Test Center, Edwards, and Colonel Charles E. Yeager, commandant, USAF Aerospace Research Pilot School, visited Norair Division last week for briefings and study preview on the N-205B Northrop space trainer and for progress discussion on the X-21 and the F-5A.

The N-205B, a member of the Northrop lightweight family of military aircraft, is designed with Aerospace Research Pilot School in mind, where it would serve to train space pilots for future manned space programs.

Colonel Yeager, the first man to fly faster than the speed of sound and who for two years put the X-1 and the X-1A through their supersonic paces up to 1600

(Continued on Page 2)

## LFC Slated for Edwards



**AND THE X-21**—Edwards men, from left, Jack Farley, base administrator; E. H. Jones, foreman, nights; and Louie Weltz, foreman, days, study facility plans in preparation for the X-21 Laminar Flow Control airplanes which are due at Edwards soon after the first of the year. T-38s and F-5As will then be asked to move over and share quarters. Air Force planning calls for more floorspace if needed as projects progress.

## Northrop Blood Bank

For the Night Shift

Monday, October 1



Product Display Building

See Your Organization Clerk



Hours, 4:30 to 9:30 in the evening



# Capability With a Heart Beat

It is nothing new for us at Norair to hear of the good flavor our travelling folks leave in the communities to which they have been temporarily assigned.

Ask the nearest neighbors at Presque Isle where we activated the Snark missile (at that time our Snark was the only operational intercontinental missile in the nation's defense inventory). Or, inquire when you pass through El Paso, Texas, or Alamogordo, New Mexico. Let the local citizens know you are a Nor-

By John B. Clark

throp man and enjoy the welcome you will receive. They, too, recall the friendly people from California who temporarily lived next door. And how about Cape Canaveral? Our Northrop "settlers" were among the first to invade the Cape area way back in the early 50's. The permanent residents of Cocoa Beach, Indiatlantic, Eau Gallie, or Melbourne will tell you that the Snark team chalked up a mighty enviable record both on the job and in the social scene during their long Northrop tour. While our scientists and technicians were looking above the clouds, our Northrop wives were ready when the communities needed a hand, and our juniors were giving a good account of themselves in the school and on the playing fields, hard by the Banana River.

Did you know that as late as August 18—just one short month ago, 250 ex-Northrop men and women held their annual get-together in Cocoa Beach at the Officers' Club—250, mind you, who, though now employed at other aerospace companies at the Cape, continue these socials to renew old acquaintances and to raise a toast to Northrop.

Much deserved commendation, both verbally and in writing, has been stated concerning the traditionally good Northrop job accomplished by the T-2 Site Activation personnel at Rapid City, South Dakota. The Northrop Norair News has carried much of this including the accolade from The Martin-Marietta Company to Max Fayweather and his team, along with warm words of appreciation from Tom Jones and Dick Nolan for a job well done.

But there is more to tell and I feel that many of us "stay at homes" would like to hear some as yet unpublished items of interest that our Norair nomads accomplished at the South Dakota outpost.

It took a little digging to come by these facts (they are a modest lot). I found it necessary to interview several T-2 returnees, as well as a few new fellow employees who had been hired locally in South Dakota but who had expressed their desire to continue working with Northrop and are now members of the Norair family at Hawthorne.

But first let the home towners of Rapid City tell a heart-warming story. "Mrs. Anderson," said the service man who was called to disconnect the utilities, "we

are sure going to miss Northrop. You are all real people and are the best customers we have ever had."

From the manager of the Sheraton-Johnson Hotel, largest in Rapid City: "It was always a pleasure for us to have the Northrop Management Club hold its dinner meetings with us. They were all ladies and gentlemen."

And from His Honor, Mayor William Raff: "You people have done much more than just move into our city. We know that many of you have become prominent in civic affairs, active on the Chamber of Commerce committees, and we know of several others who have contributed substantially to good citizenship through church activities and youth organizations."

And, hear this—The AID and NOR-AID program, of course, followed our project to T-2. The original pledge of \$3828.15 was exceeded by \$11,633.42. As a result of the excellent participation in the program, a sizeable amount was set aside in a trust fund by Aid United Givers for "health, welfare, and educational causes in the local community." The happiest man in South Dakota was Jack Cushman on the day he turned over a check for \$9434.10 to the treasurer of the Rapid City charity. Commented the treasurer: "This is the largest contribution from the personnel of an industrial organization ever awarded to our United Appeals Fund."

The local South Dakotans had good words of appreciation for the donation of blood made possible by our Northrop-Rapid City blood bank.

We are proud that our traveling ambassadors not only completed another most successful assignment, but also brought that Northrop plus, a bit of the heart of our people to the neighboring state.

It has been reported that a strange phenomenon occurred high up on Mount Rushmore as the Northrop folks, mom, pop, and the kids, wended their way from South Dakota, headlights pointing in the direction of sunny California. Lincoln, from his vantage point, cleft in stone among his fellow American greats, appeared particularly sad that day. Moisture ran down his cheeks. The rainy season, you say? Nonsense! It could have been a tear.

## Materiel

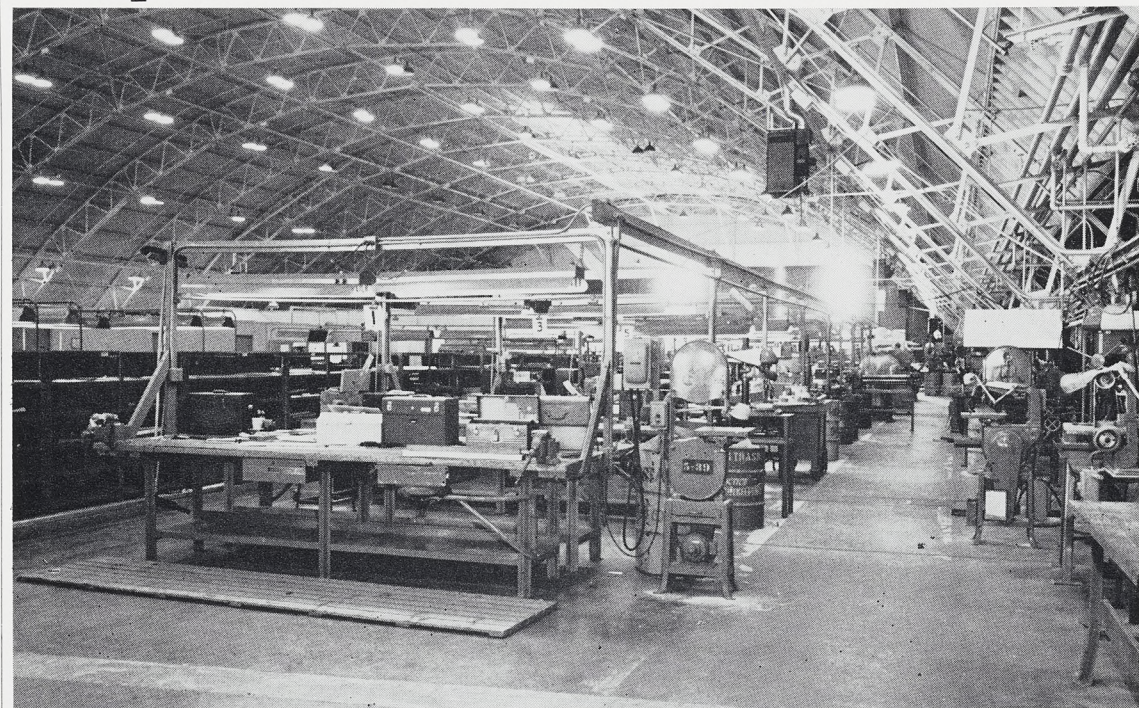
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Minnesota with emphasis on those concerns located in distressed labor areas. In addition, permanently stationed representatives of the Midwest and East are seeking out and surveying similar concerns adjacent to the base of their operations.

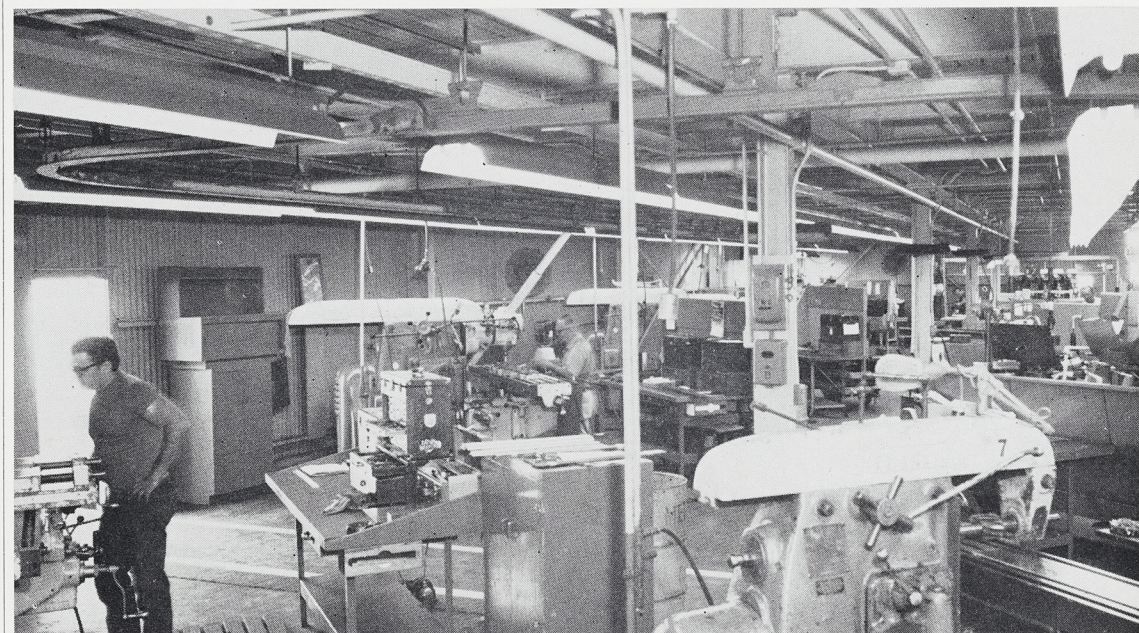
Canadian source capability, in line with the economic cooperation pact, has not been overlooked in this search for new source potential.

Presently over 100 new companies are scheduled for capability investigation as a result of this source expansion effort. All new source knowledge secured is being fanned out to other Northrop divisions, as being of possible assistance in the Corporate-wide buying activity.

## They Were the Neatest and Cleanest



**ADVANCED PRODUCTION**—Advanced Production, Rex Thornhill, superintendent, has been awarded the Norair good housekeeping sweepstakes award for the last period by virtue of having won more monthly awards than any other organization. When asked the secret of 5515's success, Mr. Thornhill ticked off their four guidelines, "A result of compliance," he stated. "Cost compliance, schedule compliance, quality compliance, and housekeeping compliance." Photo above shows Advanced Production's fabrication area.



**THE BIG CAN-DO** — Advanced Production machine area, compact, efficient, and capable. Many first articles are built here, some are handcrafted. Customer impressions, workmanship, quality, neatness, and being on time with the hardware are vital to success of Company contracts. Advanced Production is a key organization.

## N-205B

(Continued from Page 1)

miles an hour and 70,000 feet altitude, was recently appointed commandant of the school.

General Branch and Colonel Yeager were greeted at Norair by a team headed by Northrop Corporation President Thomas V. Jones; John R. Alison, Corporate vice-president, Customer Relations; Dick Nolan, Corporate vice-president and Norair general manager; and W. E. Gasich, vice-president and assistant general manager, Technical.

The N-205B, details which were revealed September 10 in the Aviation Daily, will be a two-place multi-rocket engine airplane. Altitude capability is 50 miles, this to provide Zero "Q" forces for its reaction-powered controls. The airplane is in the Mach 3 range.

Training in the N-205B would qualify pilots as astronauts. Low relative cost, as with other members of the Northrop lightweight family, has been a prime consideration in design.

Project engineer on the N-205B is Bob Graham, Organization 3630, Advanced Aircraft Systems section.

## Dr. Hummer Heads NSL Program Development

Dr. John L. Hummer has been appointed director of the Scientific Program Development section of the Northrop Space Laboratories, George N. Mangurian, manager of NSL's Applications Engineering and Planning department, has announced.

At Northrop Space Laboratories Dr. Hummer will be responsible for maintaining technical liaison with the academic community, particularly in those specialized research and scientific areas in which Northrop has unique capabilities.



DR. HUMMER

Prior to joining Northrop, Dr. Hummer was employed by Hughes Aircraft, where his latest responsibility was project manager for one of the company's satellite program proposals. Earlier, he operated his own engineering consulting firm in Saginaw, Michigan. Simultaneously, he was a lecturer and assistant professor at Michigan State University in East Lansing.

Dr. Hummer's academic career also includes teaching positions at the University of Rhode Island and the Massachusetts Institute of Technology. He obtained both his B.S. and M.S. degrees in electrical engineering from MIT.

Dr. Hummer's PhD was granted by Stanford University.

**Northrop Norair News**

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# Norair Cafeteria Story

The Norair cafeteria.

One of the key assignments in this mile-long complex of T-38s, MMRBMs, space trainers, Boeing subcontracts, Laminar Flow Control, is keeping close watch on the condition of the Division's inner aerospace man (or woman).

Freddie Wolfe, cafeteria chief, a 16-year man, and his 52 staunch helpers are the management driving force behind our caloric well-being.

A few highlights:

During a typical week, incredibly, the cafeteria serves up 17,000 cups of coffee which takes 350 pounds of the Brazilian bean.

It takes 500 pounds of ground round to make the 2500 hamburgers needed from Monday through Friday.

## POPULAR APPLE

Five hundred and fifty pies divided into 3850 slices go the way of all good pies. Apple being the most popular.

People like doughnuts at Norair. Two hundred and seventy dozen or 3240 individual doughnuts are dunked.

Five hundred and thirty loaves of bread plus 580 dozen dinner rolls (6960) are required.

All this, not to mention hundreds and hundreds of cartons of milk, cups of tea, salads, cheeseburgers, cans of tuna, pounds of bacon, dozens of eggs, ice cream, cake, wieners and sauerkraut, et cetera, et cetera, et cetera.

Freddie and his people operate on the well-known aerospace M.O. that the difficult jobs are done right away while the impossible takes a little longer.

They have hauled food stuffs to the top of Santiago Peak, Palomar, and White Mountain to serve Division researchers in far away places.

Have you ever been to the top of White Mountain?

The cafeteria in eight locations rings up 37,500 to 40,000 transactions each week. The eight locations include the cafeterias in Plant One, Two, and Three, plus snack bars, trucks, three executive dining rooms (Norair, Nortronics Palos Verdes) and the Corporate executive offices, plus a new Space Labs executive installation.

All routine.

## T-38 SUPPLIERS

Freddie has been known to serve Palmdale, Torrance, Lynwood, and Yukon. On one occasion, the T-38 Suppliers symposium in the Product Display Building, the cafeteria group moved in and in 90 minutes converted the conference area into a dining area, set silver and china, served a buffet luncheon to 343 guests, cleared up and cleaned up and left in time for the agenda to proceed on schedule.

They also provide refreshments for conferences, special events such as pin presentations, Management Club and Northrop Recreation Club functions, and to an occasional Division party or banquet and to VIP visitors in the executive offices. Flight lunches to sustain Company bamboo flight passengers is a cafeteria duty.

With all this and multitudinous

as the job may seem, Norair people are in excellent hands when it comes to food.

Specification of cafeteria equipment is that it must be the latest, safest, and the most sanitary whether it be transporting foods, both hot and cold, in stainless steel vacuum Aer-Void containers, or live steam sterilization of pots and pans, knives and forks, and chinaware in the main kitchen.

Cafeteria management assiduously follows an idea exchange program with other large aerospace companies in order to keep abreast of and ahead of new

By Aerospace Reporter

methods and innovations. They are most proud in that they enjoy an A-1 rating with the Los Angeles County Health Department. Fact is the Department on many occasions has brought its own trainee personnel to Norair for indoctrination in Freddie's gleaming establishment.

Freddie is a busy man as are all his 52 helpers. It is like running a business of your own. Aside from cooking and serving, the cafeteria chief's responsibilities include purchasing all food stuffs, supplies and equipment, planning menus for nutritious and well-balanced meals; management of revenue, accounting procedures and periodic inven-

tories; outlining and developing promotional and seasonal programs and activities for the benefit of cafeteria patrons. (Remember St. Patrick's Day and Valentine's Day?)

The cafeteria must merchandise as do other businesses that cater to the public (plant). Freddie has had "The Eighty-niner" sandwich selling for 89 cents. The "Forty-niner" selling for 49 cents. The T-38 was sort of a curve in this day of variable dollar values.

## FOR HIGHER NUMBERS

"Our next trainer contract will have a higher number and we'll make out," Freddie philosophizes.

He makes arrangements for special luncheons for Company guests including refreshments; assists in the planning, layout and design of new facilities and modifications and improvements in existing facilities; acts as consultant to Divisions of the Company on their food programs; and keeps facilities and premises in good working order and state of repair.

That's the broadbrush on the cafeteria. Their wares and their services are things we expect as a matter of course. They are good and that is why we hear so little about them.

Today however, we stopped and took a peek, and we saw what we expected to see—Something good.

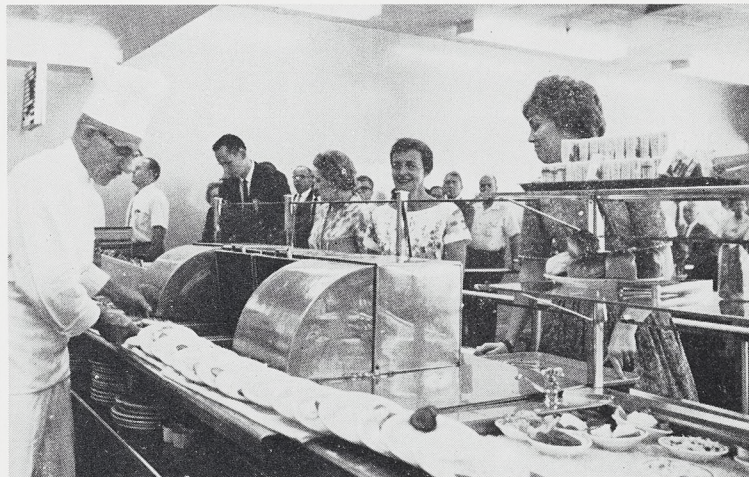
Please pass a couple of those doughnuts, Mr. Wolfe.



**THE MENU FOR TODAY**—Cafeteria Chief Freddie Wolfe and Larry Ventura plan the menu for Northrop Norair patrons. Freddie is a 16-year man. Our modern industrial cafeteria complex has developed under his guidance.



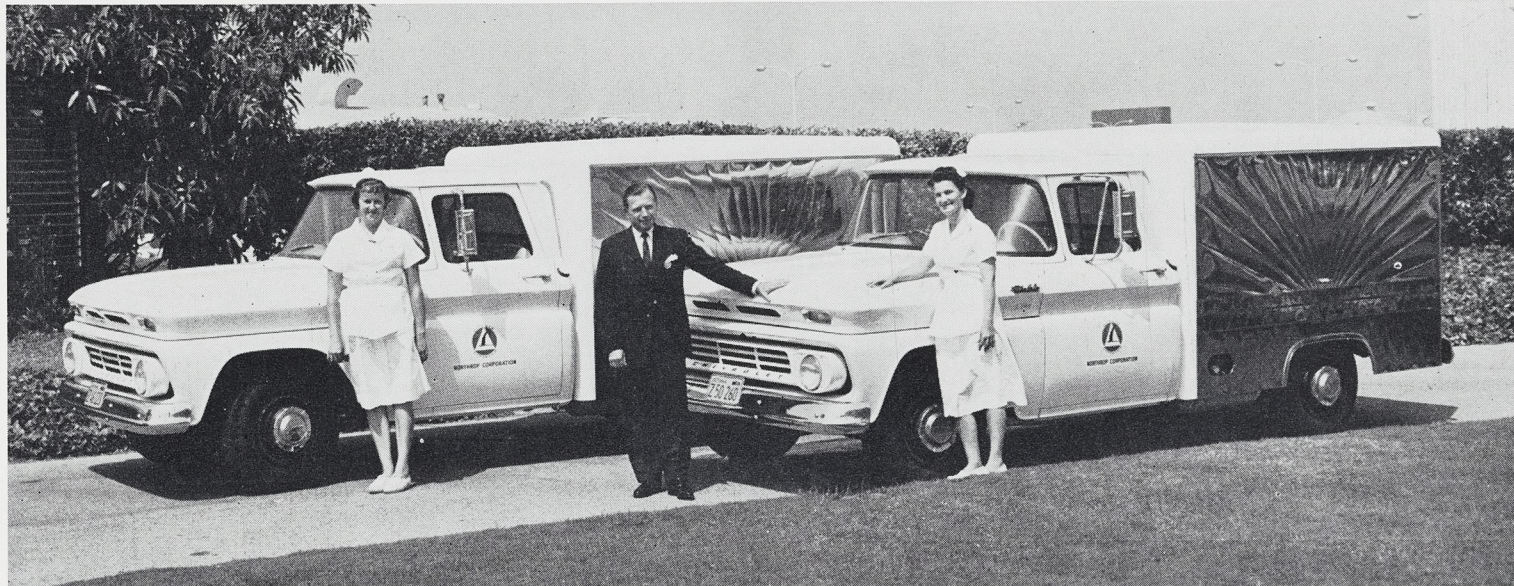
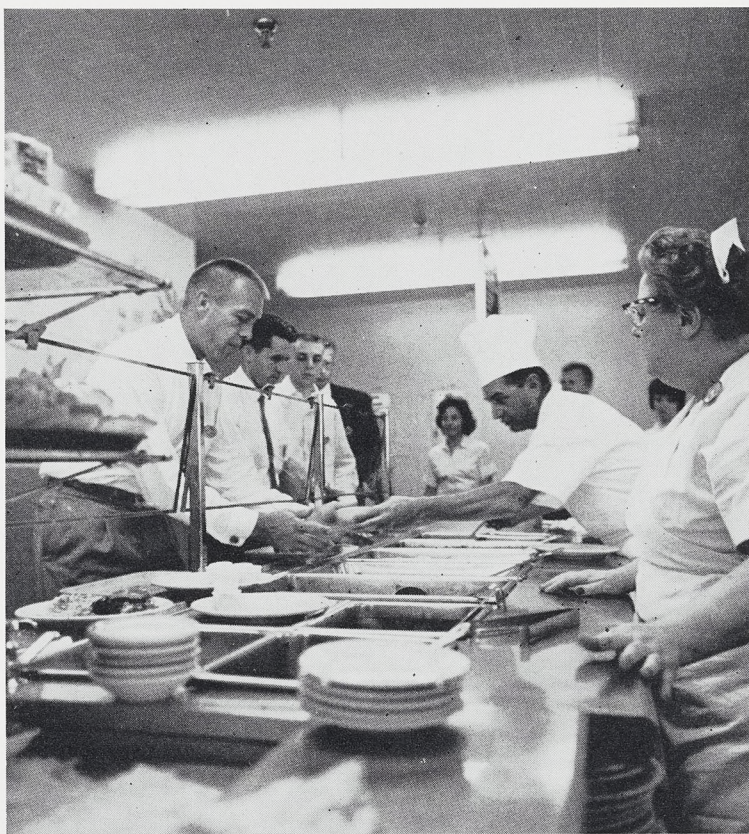
**SALADS ARE POPULAR**—Here Katherine Solomon, salad-lady-without-peer, arranges display of salads and desserts on the regular food line. What makes a salad good? "Freshness and crispness," states Katie. "Not only fresh crisp vegetables, but a fresh crisp look to the dish."



**TO CALORY OR NOT TO**—Fair ladies ponder offerings of cafeteria man John Korn at busy lunch time. Meals are planned for all appetites, all likes. Service is fast and efficient for who wants to spend their lunch hour standing in line?

**MAKE MINE**—Rapid City man ex, Ralph Branning moves down the line being served by John Marinko. Cafeteria folk say the Northrop team eats hearty.

**CATERING TRUCKS**—Bran' new and shining, this equipment is far cry from box lunch days some of us can remember. Trucks cater to far locations in Norair complex. From left are Marlys Peterson, Freddie himself, and Marilyn Hitchcock. Specification of cafeteria equipment is that it must be latest, safest, most sanitary obtainable.







## RIDES WANTED

7 a.m. — 3:45 p.m.

MANHATTAN BEACH BLVD. & RINDGE LANE, Redondo Beach, Dorothy B. Middleton, ext. 2340, FR 6-2300. 2

WESTERN & 213th ST., Torrance, Barbara Senter, ext. 2075, 320-5809. 2

WILLOW or WARDLOW & San Diego Freeway, Long Beach, Karen Schrover, ext. 1508, GA 4-8450. 2

HAWTHORNE BLVD. & SEPULVEDA, Torrance, Betty Joldersma, ext. 2756, DA 6-7235. 2

LONG BEACH BLVD. & 4TH ST., Long Beach, Joan Erkert, ext. 1508, HE 5-6237. 2

WASHINGTON BLVD. & CRENSHAW, Los Angeles, William Hunter, ext. 1981, RE 4-5860. 2

HAWTHORNE BLVD. & CARSON, Torrance, M. L. Bottorfe, ext. 720. 2

LOMITA BLVD. & WILMINGTON BLVD., Wilmington, Elizabeth Whittinton, ext. 1658, TE 4-3308. 2

BOLSA & GOLDEN WEST BLVD., Huntington Beach, Stewart Berkis, ext. 2173, TW 7-4851. 2

8 a.m. — 4:45 p.m.

PRAIRIE & REDONDO BEACH BLVD., Torrance, Viola Semonian, ext. 2151, DA 9-9670. 5

3:45 p.m. — 12:15 a.m.

COMPTON & INGLEWOOD, Lawndale, Nancy Briggs, ext. 1912. 6

## RIDES OFFERED

7 a.m. — 3:45 p.m.

BOLSA & GOLDEN WEST BLVD., Huntington Beach, Stewart Berkis, ext. 2173, TW 7-4851. 12

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

SKI BOAT, 16' Glenwood w/2 30 hp Evinrudes, elect. start, plus a/c, trailer & boat cover, \$600. FR 8-5557. A

RECORD CHANGER, 3-sp. V.M., w/new Electro Voice db. stylus cartridge, \$10. PL 4-4384. A

BABY CRIB & MATTRESS, 30x54, \$20; infant seat, \$3; maternity clothes, variety of outfits, sizes 12 & 14, approx. \$5 ea. TE 1-6567. A

HOUSE TRAILER, Clipper Silver Streak, 1953, 28', \$1800; hospital bed lift, chrome side rails, \$150; commode, \$50; micrometers, Lufkin O-2, Brown & Sharp, O-1, \$15 for both. PL 4-0817 after 4:30 p.m. A

BUICK, 1954, 2-dr., \$125. PL 5-3745 after 5:30 p.m. A

PLYMOUTH, station wagon, 1957, sports, 4-dr., \$875. Box 1901. A

BICYCLE, boy's, 24", \$15; fan, 18", \$5; vacuum cleaner, GE, \$5; glass rod, salt water-type, 250 yd. Penn reel, mono line, \$6. PL 5-4497. A

CABIN CRUISER, 19', mahogany plywood, alased, no motor well, can be finished for inbd. or outbd., \$1200; trailer, 6'4"x10' \$80; crib & mattress, 30"x53", \$20. DA 3-3521. A

BOLEX H8 delux, tripod hyd. pan head, filters, lightmeter, Weston & GE, carrying case, many extras, cost \$800; \$350. Box 1902. A

STEREO ADAPTOR, Eico MX 99, \$35. FR 9-3048. A

RED BRICKS, 500 antique, suitable for fireplace, \$7.50/100, value; \$20 or \$4 per 100. FR 4-7155. A

SABOT, Naples, registered, 19N2967 by Master Built, Dacron sail, Nylon sheet, hull moulded blue fiberglass, mahogany lee board, rudder, seats, rail, moulded buoyancy tank, bronze hardware, cartop carrier, cost \$327; \$200. FR 5-8938. A

HOUSE, 4-bdrm, 2 1/2 baths, dinina rm., living rm., lae, modern kitchen, dishwasher, built-in, dble. detached garage, lae, corner lot w/room for trailer, boat, & swimming pool, ocean view, \$34,000. GE 1-0658. A

REFRIGERATOR, frostless freeze Coldspot, 2-dr, white, 1961 model, terms available, \$175. OS 9-8354. A

WEDDING GOWN, size 9, ballerina length, cost \$95, silk oraanza & lace, \$35. PL 3-6071. A

FLUTE, Armstrong, \$90. HA 9-1757. A

PIANO, lae, upriah, w/bench, \$95. OS 5-4371. A

RANGE, Magic Chef, 4-burner, grill, oven, broiler, \$115; refrigerator, automatic def., \$45; hide-a-bed couch, red leather, \$50; tires, 4, 8.00x14, \$7 ea. or \$24 for 4. FR 2-7655. A

## FOR SALE

TRUCK ENGINE, 1956 F100 Ford, w/overdrive, 3 2-barrel 97 Strombera carbs. on an Edelbrock manifold, ported & polished, high comp. heads, Grant rinas, 380 cu. in., new hot plugs & points, \$200. TE 1-3045. A

AIR CONDITIONERS, 2 Fedders, 9700 BTU ea., used 3 months, \$175 ea. or \$300 both. EX 1-4860. A

LAWN MOWER, Olympic 20", 4-cy. ena. B/S rotary-type, \$45; 6' bar-b-a table w/2 benches, \$10. 943-2838. A

SPEAKER SYSTEM, hi-fi stereo, E. V. Georgian w/stereo, \$200; 40W Marantz amplifier, Model 2, \$100. DA 4-0086. A

TIRES, Sears retread 7.10x15, on balanced wheels for 1950 through '52 Stude, 900 miles on set, \$42 for 4; \$12 ea. TE 1-5930. A

LAWN MOWER, rotary Briggs & Stratton, \$20; reel-type, remodeled, \$50; dinette set, yellow & chrome, 4 chairs, need recovering, \$50. OR 2-5578. A

FORD FALCON DELUXE, 1961, 2-dr. r/h, big engine, std. trans., needs tires, \$1495. PL 6-7367 after 6 p.m. A

SKI BOAT, 14 1/2', Cruzian Custom, 60 hp Mercury & trailer, \$850. DA 9-9407. A

BUNK BEDS & DESK, maple, \$100; Boy Scout uniform, size 12, \$6; Ford Fairlane 500, 1958, p/steering, brakes, r/h, w/w, \$1200. OS 5-9243. A

FLASHBULBS, 46 #22, \$6; 75 #5, \$7; 18 #6, \$2. 376-5969. A

INTAKE MANIFOLD, Crazer loas for Olds, 6 model #97's, ball bearing linkage, fuel block, finned alum. carb. cover, \$48, NE 2-7610. A

ELECTRO VOICE REGENCY enc. w/Jim Lansing D-130 speaker, Packard Bell record changer, Harmon Kardon 10 watt amplifier & AM/FM metronome tuner, \$150. PL 6-5846. A

CHEVROLET, Bel Air, 1956, 2-dr, 8-cyl., \$450. 371-8564. A

WIG, human hair, reddish brown, size 21-22, \$75. DA 9-9670. A

POWER TABLE SAW, 6" Craftsman, w/tilting arbor & 1/3 hp motor, wooden stand, \$50. WE 5-0493. A

PLYMOUTH, 1956, 2-dr., r/h, automatic trans., new tires & paint, \$450. FR 9-0659 after 5 p.m. A

SKI BOAT, 17', inbd, V bottom, alased, Hallcraft V drive 10 over aars, 1956 Packard 275 hp engine, approx. 75 hours use, ena. & access, mounts stainless steel, \$1650. FR 1-6860. A

VOLKSWAGEN, 1958 station wagon, good cond, low mileage, \$950. PL 6-9611. A

ANTIQUES, odds & ends, collectors' items, also horned Victor phonograph, \$75. PL 6-5180. A

HOUSE TRAILER, bunaalow-type, \$125; freezer, 21 cu. ft., \$100. OS 5-5978. A

BICYCLE, boy's, Deraillleur, \$35. OS 5-6081. A

WASHER, Kenmore, \$40; couch & matching chair, \$40; refrigerator, Coldspot, \$40; child's fire engine, kiddie car \$7. PL 6-0768. A

GYM SET, hardwood, ladders, swing, trapeze, cross bars, climbing rope, \$40; maple bunk bed frames, w/ladder, \$25; dishwasher, 1961 Waste King Deluxe, portable, sparkle rinser, lae, cap, \$130. OR 0-6896. A

REFRIGERATOR-FREEZER, 22' Manitowoc, 2-dr, self-defrost, freezer 400# cap, \$300. DA 3-5497. A

BOAT, 18' Fashioncraft, 40 hp Scott elec. motor w/4 hp aux. motor, ride guide steering, upholstered seats, bait tank, lights, 4 life preservers, Coast Guard approved, \$1000. FR 9-1086. A

PUPS, purebred miniature dachshund, 6-wks-old, black & tan, AKC reg. \$65 ea. OR 7-6517 after 4 p.m. A

HIDE-A-BED & matching reclining chair, provincial, \$75. DA 9-9464. A

STUDEBAKER Land Cruiser, 1950 w/std. trans, o/drive, 4-dr sedan, good transportation, \$150. OS 6-0749. A

FORD Delux Coupe, model A, 1931, good rubber & running condition, new clutch & brakes, \$200. PL 5-7692. A

HOUSE, 4.5% GI resale, bath & 3/4, w/w carpets, custom drapes, patio & many extras, submit on down payment, near schools & shopping, \$19,950. FR 1-1308. A

PUPS, German Shepherd, 3 females, 6 males, \$20 females; \$25 males. HA 5-6996. A

FIAT multipla, 1958, \$325. OS 5-2159. A

RACING SABOT, El Toro, dacron sail, \$175. FR 5-5760. A

HOUSE, 3-bdrm, w/many extras, \$17,500. GA 3-2261. A

GAS RANGE, Western Holly, 30", \$75. DA 5-2918. A

BAR BELL PLATES, 2, 25-lb, \$6. OS 5-2797. A

TOOL BOX, lae, Gerstner machinist-type, w/precision tools, micrometers, dial indicators, hole gauges, etc, \$250. OS 6-3792. A

HI-FI 25 watt amplifier, sep. preamplifier, FM tuner, lowboy speaker system, \$85. FR 9-5690. A

DUTCH BUNNIES, 8-wks-old, tame, \$1 ea. OS 6-3138. A

BOAT, 12', 35 hp Evinrude, 15" tires on trailer, \$450. OS 6-7854. A

HOUSE, custom built, 3-bdrm, family room, fireplace w/barbecue, built-ins, carpeted, on foundation, numerous closets, 1600 sq. ft. lae, dble garage, cement drive & walks, near churches & schools, \$3700 dn, \$24,500. 323-6279. A

## A Northrop First in Softball



**NORTHROP FIRST**—Northrop All-Star softball team has won the Southern California Municipal Athletic Federation Industrial tournament. The decision came after downing Beckman Industries in extra innings. Final score, 2 to 1. Photo shows team trophy and individual trophy ceremony. From left, standing, Marty Martinez, Ev Crum, Greg Horn; Bill Greene and Dick Rountree, co-managers; Greg Halberg, pitcher; Charlie Boyle, chief, Personnel Activities; Art Valdez, John Massey, and Don Greco. From left, front, Dale Crum, bat boy; Bob Martinez, John Leffingwell, Jim Ryan, Mike Sulentuh.

## FOR SALE

FORD, 1953, stick shift, glass pack muffler, gray primer paint, \$145. DA 9-2298. A

STOVE, 4-burner, aas, \$97.50. 295-9997. A

CHEVROLET, IMPALA, 1962, 409 Super Sport, white w/black interior, very low mileage, plus many accessories, \$3000. OR 7-0765 after 6 p.m. A

CYCLO MASSAGE, hand unit, Naaara w/controls, \$20. 789-6428. A

HOUSE, w/pool & cabana, 5 min. from Northrop, 3-bdrm, 1 1/4 baths, carpeting, drapes, elect. range, 10% dn, \$25,500. DA 3-4954 eveninas. A

BICYCLE, Columbia, girl's 26", blue, \$20. HA 5-6996. A

TEN ACRES in Joshua Tree, Calif., \$3400. LA 1-2073. A

V/W PICK-UP TRUCK, 1958, canvas cover over bed, \$460. Box 1903. A

PLAYPEN, \$10; porta crib, \$10; bumper trailer hitch, \$5. FR 9-7775. A

HI FI TUNER, Eico FM, \$35; multiplex adapter, \$35; AM tuner \$35 or \$100 for all 3. 378-5348. A

CABIN CRUISER, 24', displ. hull, mahoa, planked & batten seamed construction, 100 hp Gray Marine ena., head, aalley, ship to shore radio, new navy top & side curtains, & cockpit cover, fully equipped, 2 aas tanks, 20 aal. cap, C.G. inspected, \$3000. FR 9-4609. A

DODGE, 1954, 2-dr, h/top convert, r/h, automatic, \$300. PL 4-0105 after 4 p.m. A

BOAT, 15'11", catamaran, twin 40-hp Mercs, bait tank w/pump, & extras, \$1900. FR 2-4291. A

SLIDE, steel, 6', \$8.50; hobby horse, \$9.50; playpen, folding, pad, \$11.50. 754-9637. A

## WANTED TO BUY

HOSPITAL BED & non-collapsible wheelchair w/wooden seat, also, need services of pleasant, mature lady for companionship, 8 am-5 pm, Monday through Friday, cook breakfast & lunch for self & convalescent, no housework, own transportation, 295-1158 after 6 p.m. B

BICYCLE, boy's, standard 26" size, must be reasonable, Will consider one needing repairs. OS 9-5922. B

COINS & coin collections, old or scarce, U.S. & Canadian only. OS 9-5922. B

PATIO TABLE & benches, redwood. FR 5-8778. B

MOBILE HOME, over 30' & under \$1000. FR 2-3827. B

ORGAN, dble keyboard, rifle, .22 cal. semi-auto; shotgun, 20-gauge. OS 6-8331. B

SERVICE BOX, 100 amp. elec. w/circuit breakers; built-in range & oven, new or used but excellent condition, prefer aas type. DA 6-5558. B

STOVE & washing machine, 3 to 5 years old, good condition, reasonably priced. 672-6143. B

GAS LOG for fireplace. TO 2-9547. B

## FREE (to be given away)

CABIN BUILDERS, doors w/casinas, 1 24" interior & 1 36" exterior w/half screen. FR 5-8335. D

## Personnel Activities has Bargain In Guest Books for Public Events

Something new has been added.

Personnel Activities has obtained a limited quantity of entertainment guest books for the bargain price of 25 cents each.

Each book contains 52 tickets with an approximate \$100 value to sports and entertainment events in Los Angeles and the surrounding area.

## RENTALS OFFERED

APT, bachelor-type, kitchen w/stove & refria., no children or pets, close to Prairie Ave., \$60. 370-2663 after 6 p.m. A

APT, delux 3-bdrm, 1 1/4 bath, furn, 4 short blocks to Northrop, carport, disposal, w/w carpet in living room, hardwood floors, drapes, \$135 mo. OS 6-1574. E

APT, duplex, 2-bdrm, unfurn, w/aarage, 3 mi. from Norair, adults only, \$90 mo. DA 4-5086. E

APT, 2-bdrm, w/w carpet, drapes, built-ins, disposal, aarage, water-trash pd, \$100 mo. OS 5-8988. E

APT, 1-bdrm, unfurn, children & pets OK, fenced yard, patio, range & refria. available, \$65. mo. OS 9-7615. E

APT, 1-bdrm, unfurnished, near Northrop, adults only, \$65 mo. OR 1-5267. E

APT, 1-bdrm, unfurn, disposal, sound insulated, near Northrop, bus line & shopping center, avail. Oct. 1. \$75. OS 5-9695. E

COTTAGE, 1-room, 30'x14', private bath, fireplace, furnish if desired, lights, aas & use of laundry room, \$65. FR 4-1791. E

HOUSE, 1-bdrm & den, 1 or 2 children OK, stove & friadaire furn, water pd, \$75 mo. FR 9-1206. E

HOUSE, 2-bdrm, & den, w/w carpeting, fireplace, stove & refrigerator, gardener, \$130 mo; duplex, 2-bdrm, avail. Oct. 1, \$115 mo. OR 3-3088. E

APT, 2-bdrm, unfurn, disposal, fenced yard, redecorated, children OK, \$79.50. FR 7-5407. E

HOUSE, 2-bdrm, furn, lae, enclosed yard, near El Camino, \$135 mo. OS 5-2294. E

## PERSONALS

SINCERE APPRECIATION for your expressions of sympathy at the loss of our baby, MR. & MRS. BILL POSEY. L

## FOR SALE OR TRADE

CABIN CRUISER, 18' fiber alased, marine converted Ford 85 w/paraan trans, 2 bunks, bait tank, 2 new 25 aal. aas tanks, \$2000 or trade for 24'-26" boat. FR 5-7428. M

## BOWLERS----

Thursday Del Mar Men's Trio League 6:30 p.m. openings available

Men and Women Substitutes needed Monday through Thursday

Hours, 4:30 to 9:30 in the evening  
Call Personnel Activities-2784

Each guest book ticket is valid for one free admission when another admission to the event is paid. Books nominally expire on the 31st of December.

Events include Rams and Junior Rose Bowl football, hockey, Lakers basketball, Los Angeles Open golf, sports car racing, California Sports Car Club, sport fishing, bowling, theatres, and skiing at Mt. Baldy.

Books are available at Personnel Activities.

## CAMPING CLUB WILL MEET AT SILVER LAKES

The NRC Camping Club will rendezvous at Silver Lakes Ranch for a camp-out September 29 and 30, it is announced by Fred Armstrong, NRC president.

Silver Lakes Ranch is five miles north of Corona on Route 71.

Participants should bring a tent, camper or trailer.

The area is grass lawn with plenty of shade, plenty of tables and clean restroom facilities.

Horseback rides, trout fishing and water skiing are available.

Cost for the outing only will be \$2 a day for each family.

A potluck dinner is scheduled for Saturday at 5 p.m. An outdoor movie and campfire circle will follow.

On arriving at Silver Lakes Ranch watch for the Northrop assigned area, states Fred.

## NRC STAMP CLUB TO REACTIVATE

An NRC stalwart.

The NRC Stamp Club was reactivated at a meeting held Monday, September 24 at the Product Display Building, it has been announced by Claude Pike, acting commissioner.

As the name implies, this Club serves the stamp collection hobby through trading, studying and evaluating postage stamps of various issues.

Club ranks are open to both experienced and amateur collectors. Meetings are held the fourth Monday of each month.





# Northrop Norair News

Issued biweekly by Norair Division of Northrop Corporation • Wednesday, October 10, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, RAPID CITY, EL PASO

## NEWS BRIEFS

**NSIA**—Richard E. Horner, Corporate senior vice-president, Technical, and general manager, Northrop Space Laboratories, has been elected a vice-president of the National Security Industrial Association. In accepting the duty, Mr. Horner joins a group of distinguished industry leaders in guiding the affairs of one of the most influential civilian defense planning groups in the USA. NSIA, with headquarters in Washington, D.C. serves as an industry advisory body to the Department of Defense and the National Aeronautics and Space Administration.

**"EXPLORING INDUSTRY"**—Welko Gasich, vice-president and assistant general manager, Technical, was host yesterday to one of the first "Exploring" symposiums to be held in this area for Explorer Scouts of America. Following the successful experiment in Orange County, the Explorer program brings together boys seeking answers to questions that will mold their future, and men who have achieved success in their field and are living examples of the American freedom of opportunity and enterprise. . . . Held for scouts in the Centinela Valley District, the meeting brought local industrial and civic leaders to Northrop for discussions and action in launching unit sponsorship of Explorer Scouts. Norair intends to lend support to an aerospace unit or a similarly oriented group to encourage boys to become educated in the modern technologies. . . . The meeting was highlighted with Explorer program briefings by an Orange County team, led by William H. Spurgeon III, member of the Explorer Committee, National Council, Boy Scouts of America. Mr. Spurgeon is credited with establishing the basic formula leading to the Explorer program. . . . The next issue of the Northrop Norair News will feature photos on this important community affair.

**LUNAR SOIL**—Dr. Emanuel Azmon, geologist, Planetary Physics and Chemistry Lab, presented a paper entitled "Lunar Soil Sampling and Testing" before the Fourth Pacific Area National Meeting of the American Society for Testing and Materials held at the Statler Hilton Hotel in Los Angeles, 1 to 5 October.

## Transport New Look



**UP AND DOWN THE FIELD**—New front-wheel drive Willys bus for Norair and Nortronics personnel features low level steps, large passenger capacity, with economy of operation a strong factor. Built to Northrop specifications, only other one similar is on duty at International Airport for satellite passengers. Bus makes 15-minute round trip run between Plants Two and Three with way stops all along the line. Step aboard then everybody. Leave the driving (and parking) to us.

## Northrop Credit Union Board Ups Loan Maximum, More Payment Time

The Northrop Credit Union board of directors has approved and put into effect a series of loan policy changes, it has been announced by Walter T. Gage, treasurer.

Employment service requirements, repayment periods, interest charges and maximum amount of loans have been

liberalized by the board's action. Effective date of the changes was October 1.

The maximum for unsecured loans is now \$600. Highest loan previously available was \$400.

The length of employment qualifications has been sharply reduced. Persons with one month

service can now apply for a \$50 loan. Previous requirement was three months.

Persons with three years service can now borrow up to \$600, the maximum unsecured loan. This was formerly four years and \$400.

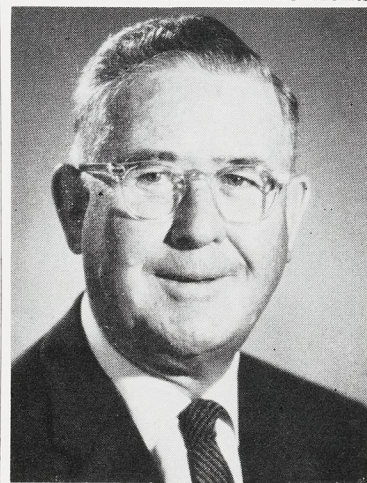
Weekly repayment time has been extended to 18 months, with a \$3 a week minimum. This had been 54 weeks.

Refinancing of existing loans will not be considered until the loan is at least three months old.

The rate of interest on loans secured by Credit Union shares has been reduced to 3/4 of a per cent per month. This is for existing loans as well as new loans and represents a 1/4 per cent saving.

Personnel with only three months service can now qualify for auto and home improvement loans. Formerly one year service was needed.

\$200 FOR REFERRALS



WALTER T. GAGE

## Management Practices Featured

Norair Division has received high accolades for its management science tools from "Defense Management Practices Letter," a twice monthly publication from government and industry on modern management techniques.

The article, Case History Number 1, in the September 15 issue of the Letter, outlines and discusses the concepts of "total management" brought into force during the past three years by Thomas V. Jones, Corporation president, and Dick Nolan, Corporate vice-president and Norair general manager.

Covered in detail are Norair Division management sciences including the activities of Long Range Planning, Management Research, Management Development, Target Cost, Management Operating Report, Integrated Management Systems, Automated Operations Control, and Master Parts Listing.

The article probes deeply into the Division approach to cohesive team effort in successfully combining the elements of technology, with cost and organization.

Information for the article was obtained through a series of interviews arranged by Don Roberge, Corporate Public Relations and Advertising.

BRING AN ENGINEER

## Air Force to Accelerate Jet Training

**WASHINGTON (AFNS)** — The Air Force has announced it plans to increase its jet pilot training program by over 40 per cent beginning this year.

The increase will be gradual. Each class will be enlarged until the program can turn out approximately 2000 pilots annually, rather than the present 1400.

Additional jet aircraft entering the Air Force inventory and the increase in retirements expected as many pilots reach 20-year status were two reasons given for the decision to accelerate the pilot

## NRC "Balloween" Ball All Set for October 26

Ghosts, goblins and broom-type transportation will hold undisputed and full sway at the Northrop Recreation Club "Balloween" ball to be held Friday night, October 26, it is announced by Fred Armstrong, NRC president.

The event will take place at the Gardena Elks Lodge, 1735 West 162 Street.

Chairman for NRC special events is Dave Carney, last year's NRC president.

Dress is optional, says Fred, and by that he means costume or

casual. As if anyone would attend a Balloween ball in other than the traditional mask and garb in celebration of All Saints Day.

Admission is \$1.25 each and tickets are available now at Personnel Activities.

There will be many prizes both for costume and a twist contest, plus total surprises. The costume prizes will be for the best dressed couple and the best dressed man and woman.

A reduced price cocktail hour starts at 8 p.m. Dancing from 9 p.m. to 1:30 a.m.

## REQUESTS MOUNT FOR TALKS ON NORAIR RECORDS MANAGEMENT

The accomplishments of Northrop Norair in the relatively new business science of records management are being viewed with growing interest by industry in the metropolitan area and the Southland as well.

B. R. Bonnett, director, Management Research and Service, reveals that Leo Richman, chief, Records Management, has been scheduled for talks on the subject as far ahead as February 1963.

Dates of Mr. Richman's addresses are as follows:

American Institute of Industrial Engineers in San Diego, October 12.

National Secretaries Association, Culver City, November 8.

Systems and Procedures Association, Inglewood, December 18.

American Records Management Association, Los Angeles, February 11, 1963.

National Association of Accountants, Long Beach, February 22, 1963.

Also requested but not yet scheduled are talks at the Long Beach State College and the Work Simplification Roundtable, Southern Permanente Services.

NORAIR NEEDS ENGINEERS

training program.

The new training rates will require continued use of the eight undergraduate pilot training bases presently engaged in the program. These are Webb AFB, Laredo AFB, Laughlin AFB and Reese AFB in Texas; Moody AFB, Georgia; Craig AFB, Alabama; Vance AFB, Oklahoma; and Williams AFB, Arizona.

Implications of the increased

training on matters such as base strengths, possible construction requirements and aircraft for these bases in future months are now being studied by the Air Force.

In the foregoing list of bases scheduled for accelerated pilot training, Webb, Reese, Moody, Vance, and Williams, are in the T-38 program.

REFER ENGINEERS



## Job Satisfaction What is it?

All of us, both in management and personnel, are in our own way responsible for the working conditions in today's industrial establishments. The industrial relations man is primarily concerned with the maintenance of the best working conditions pos-

By John B. Clark

sible for all personnel in his company. We need only compare the working conditions of 30 or 40 years ago with the comparative "ideal" working conditions which exist in industry today to stand convinced that the so-called "good old days" were not so good after all, at least from the standpoint of human relations. We may conclude that management has put good personnel relationship high in the order of business.

Going back a few years at the beginning of World War II, California was just beginning to reflect, industrially, movement toward all-out war production. The aircraft industry mushroomed almost overnight; new young blood entered the industry. Competitive bidding for manpower growing scarcer month by month brought about innovations in attitudes toward the work force. New ideas unheard of before were tried out.

### NRC IS FORMED

At Northrop during the early days of the war, the Northrop Recreation Club was formed. During those hectic days loudspeakers bringing news and music were installed in luncheon areas — another Northrop first. The idea grew. Today most companies of any size provide recreation programs for their personnel. You have only to glance at the plant publications to see how far modern management has advanced along the road to good human relations. We have group insurance programs, retirement plans, suggestion awards and safety programs, medical services, personal counselling, on-the-job training and management development courses, and many others, that indicate recognition of the fact that industry is, after all, staffed with people, with human beings.

One practical conclusion we can draw from all this is that a good human relations program is industry's best "help wanted" ad. The word gets around. But all these so-called "fringe benefits" by themselves do not bring job satisfaction. Soon they are taken for granted—regarded by many as merely "conditions of employment". More is necessary than these fringes and only an enlightened management and supervisory force can fill this requirement.

### NATURE OF MAN

Psychologists and philosophers have struggled for ages to define in irreducible terms the nature of man. They have dwelt endlessly on the basic motives which move men to continue to progress so-

cially. Man's wishes have been described as being such things as security, new experiences, recognition, and belonging. I believe that a modern economic fallacy has evolved as a result of our placing disproportionate emphasis upon security alone. Have we constructed an economic man who supposedly reacts only to economic influences? Have we been tempted to regard the pay envelope as the passport to industrial peace? The truth of the matter is the economic man does not really exist as such. Man is much more complex and intricate than a coin device — he is 10 million times more cunning than anything any mortal engineer has yet devised—he is a human being. Why not treat him as such.

### CREATING

Man's needs surpass mere material compensation for labor performed or services rendered—he must be satisfied that he is not only *producing*, but that he is also *creating*. He must be satisfied that he not only *exists* as a unit within an industrial organization, but that he also *belongs*. He must be satisfied that he is being given the opportunity to seek new experiences and develop new skills if he so desires. He wants the result of his skill to be recognized by a smile of approval or the comment, "well done". These things spell job satisfaction. It is within our province to provide them for the persons who work with us.

At Northrop we are sincerely interested in the security of all personnel. Therefore, we do not disregard the economic aspect of the work situation, but we can guard against its being overemphasized. Perhaps no person has better expressed this thought than did Mr. Clarence Francis, former chairman of the board, General Foods Corporation, when he said:

"You can buy a man's time. You can even buy a measured number of skilled muscular motions per hour or day. But you cannot buy *enthusiasm*, you cannot buy *initiative*, you cannot buy *loyalty*. You have to earn those things!"

### YOU MUST EARN IT

It follows that you cannot buy job satisfaction for your personnel. You have to go about earning it.

As an old timer here at Northrop, I feel that the promulgation of this philosophy has earned us an enviable reputation as a productive team that successfully meets and often exceeds our contractual responsibilities in a climate of mutual understanding and respect. While our batting average is high in this regard we should remember that in the final analysis we are all just human beings with inherent strengths and weaknesses. Therefore, it is well that in our day-to-day personal contacts we practice the established and proven rules of social behavior. The most important of these, of course, is the Golden Rule itself. Only then will we create the environment conducive to job satisfaction. Only then can we truthfully continue to say "Northrop is a good place to work."

NORAIR NEEDS ENGINEERS

## Emphasis on Customer Service Brings List of New Assignments

Signifying strong emphasis on service to the customer a series of high level appointments including a managership, an administrator, and four directorships have been announced by Division officials.

Frank Mathes, director of Customer Service section, was named manager of that activity when it



FRANK MATHES

was redesignated Product Support and responsibility elevated to department level, it has been announced by F. W. "Bob" Lloyd, vice-president and assistant general manager, Operations.

R. M. McNamara, manager, Contract and Pricing department, has named G. A. Kelley, former



G. A. KELLEY

director, Contract Pricing, to the position of administrator, Negotiations and Pricing. Mr. McNamara named A. W. Morgan director, Contract Pricing to succeed Mr. Kelley.

Also in the Contract and Pricing department, John Bellevue, chief, Graphic Services group was made director of the newly established Graphic Services section.

In Technical, Welko Gasich, vice-president and assistant general manager, Technical, announced the appointment of William M. Frash as director of the Aircraft Marketing section. Earlier, Mr. Gasich had announced the appointment of James W. Dunham to the directorship of Advanced Missile Systems.

Frank Mathes, new manager, Product Support, first came to the Company in 1944 as an electrical inspector on the P-61 night fighter. He has held the positions of chief, Customer Field Service; chief, Field Service and Training; chief, Field Support, and director, Customer Service section.

During Mr. Mathes' Norair career he has contributed significantly to product performance on the P-61 Black Widow, F-89 Scorpion, the Snark missile, and the T-38 Talon. His work has helped achieve for Norair its outstanding record of airplane ready rate and high degree of flight safety, both which have established new records and standards

for the industry.

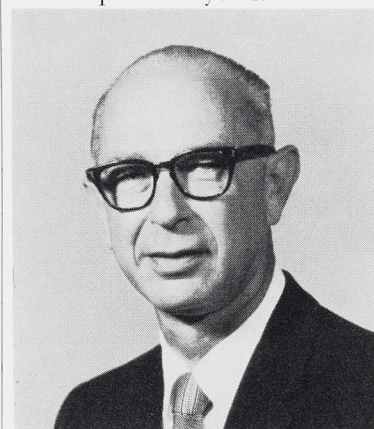
G. A. Kelley, administrator, Negotiations and Pricing, has had 20 years experience in the aerospace business.

At Northrop he has successively held the positions of supervisor, Hours Control; general supervisor, Program Planning; assistant to the vice-president and director, Customer Relations; and director of Contract Pricing.

Prior to his association with Northrop, he was with Douglas Santa Monica in Master Scheduling and Douglas Tulsa in Production Analysis.

Mr. Kelley was educated at UCLA in business administration.

Arthur W. Morgan, director, Contract Pricing has been with Northrop for 10 years.

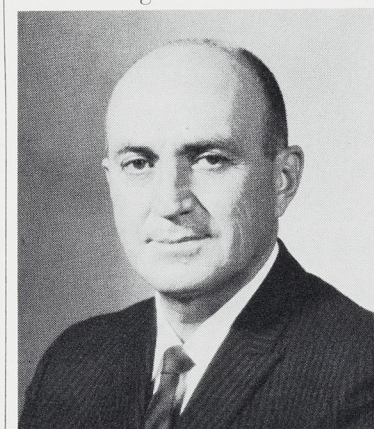


ARTHUR W. MORGAN

His first assignment was that of staff assistant, Contract Pricing, and was later moved up in the organization holding the various positions of major proposal estimator and general supervisor, Contract Pricing; and assistant director, Contract Pricing.

Prior to Northrop, Mr. Morgan was with Martin Marietta as chief estimator.

He was educated at the Baltimore College of Commerce ma-



JOHN R. BELLEVUE

joring in accounting; at the Peabody Institute of Baltimore where he was awarded the one-year Juilliard Fellowship and three-year Peabody scholarship. He has also participated in many business administration courses while at Norair.

John R. Bellevue, director, Graphic Services section, is a 20-year man having become identified with the Company's Production Illustration group during World War II.

He has held the positions of supervisor, Technical Manuals; supervisor, Engineering Publications; general supervisor, Engineering Data; chief, Reproduction Services; and chief, Graphic Services.

Mr. Bellevue has had a total of 31 years experience in the graphic arts field. He was educated at the New England School of Design in Boston, Massachu-

setts. He took special graphic arts courses at the University of Southern California and at the Los Angeles Art Center. He taught perspective drafting at UCLA during the war.

William M. Frash, director of Aircraft Marketing and a newcomer to the Division was formerly manager of Customer Re-

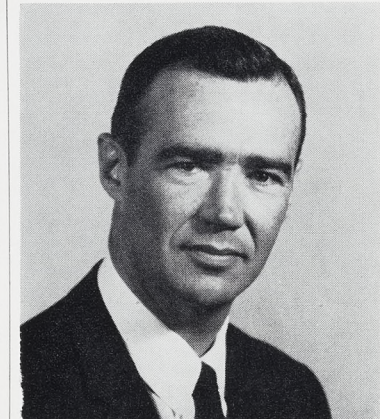


WILLIAM M. FRASH

lations at Aerojet-General's Solid Rocket Plant in Sacramento, a position which he held for four years.

He came to Aerojet from 20 years service in the U.S. Marine Corps where he attained the rank of colonel.

Mr. Frash attended the Uni-



JAMES DUNHAM

versity of California at Berkeley where he majored in economics. He was awarded his B.A. degree in 1938.

James W. Dunham, director, Advanced Missile Systems was formerly president of Space Recovery Systems, Inc., El Segundo.

A graduate of the U.S. Military Academy, Mr. Dunham held the rank of lieutenant colonel when he resigned from the U.S. Army in 1959 after 15 years of active duty. From 1959 to 1960, he was research director for Booz Allen Applied Research, Inc., Bethesda, Maryland. In January 1961, he accepted the presidency of Space Recovery Systems, Inc.

Mr. Dunham entered West Point in 1941 and received a B.S. in military engineering in 1944. He continued his education while on active duty, receiving an M.S. in aeronautical engineering from the Johns Hopkins University in 1950.

EARN REFERRAL AWARDS

**Northrop Norair News**

VOL. 20 NO. 20

1001 E. Broadway, Hawthorne, Calif.  
A NORTHROP CORPORATION  
PUBLICATION

NORAIR DIVISION

Published every other Wednesday

CHARLES BRADFORD, Editor

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## T-38 Flights

**DEMONSTRATIONS** — Norair Marketing team demonstrates T-38 to Navy and Marine air officials. Here Brigadier General Louis B. Robertshaw, head of Marine Air Reserve Training, Glenview, prepares for El Toro takeoff with Norair pilot Drury Wood.

**VMT-2**—Major A. W. (Tony) Anthony, Operations officer and Lt. Colonel Paul B. Henley, commander, VMT-2, El Toro, compare their impressions of the trainer. **BRING AN ENGINEER**



## Secretary Zuckert Lists Space Criteria--More Than a Pathway to Other Planets

Air Force Secretary Eugene M. Zuckert told the Air Force Association convention in Las Vegas that space is more than the pathway to other planets . . . it is also the medium of access to all of the earth.

And as a new medium of activity for man, he said, "space is also a medium in which we must look to our defenses."

The Air Force, under its assigned mission, he told the AFA, is concerned with preparations

for dealing with threats to the security of the free world that might evolve through the use of space.

"Because the air medium flows into that of space, the evolution of aerospace capabilities by any nation, either the Soviets or the United States, is likely to lead to flight capabilities of a great variety of speeds, altitudes and distances," he stated.

"This calls, of course, for research and development to evolve such capabilities and the acquisition of new knowledge on which engineering designs can be based," he said. "This is one of the reasons for our growing research and development budget for space projects."

The United States, he said, is dedicated, as a matter of national policy, to the peaceful exploitation of the space medium. It does

not intend to extend the thermonuclear arms race in space.

"We are, however, taking the steps to enable us to protect ourselves in the event the Soviets or any other nation were to undertake missions in space that would endanger our security," he pointed out.

As we look into the future, he told his audience, the things we will have to do to be able to protect ourselves and preserve freedom in space seem not too different from the traditional military missions.

"We have learned a great deal from the work we have done on space projects in the past, and we are applying those lessons to the future. We must see to it that we focus rather than spread our efforts. The recent decision to go ahead with the Titan III booster was an important step forward toward this end.

"We need to take the same approach in other areas of our space work. We must guard against spreading our brains and dollars too thin.

"These are the principles on which Air Force space program in space must be based:

"a. Ample preparation to utilize the space medium.

"b. Ample preparation to defend ourselves in case others choose to extend the threat of aggression to outer space.

"c. Concentration on the really important tasks, including today's job and not just tomorrow's, and

"d. An organizationally disciplined space program — well planned and specific—which fits into overall national plans and objectives.

"The free nations of the world are subject to attack—or blackmail—through space. Earth can be dominated from space. Nations can be disfranchised in space, and on earth from space, unless those who believe in freedom and progress, with justice for men, are strong enough to prevent it. We in America have no choice but to extend our defenses as far as they need to be extended, to save freedom on earth.

"Air Force responsibilities continue heavy as the danger to freedom mounts. We should rededicate ourselves to the ideal and the service of the people of the United States in their search for peace, in freedom with justice, and for knowledge even into the space beyond this world," he concluded.

EARN UP TO \$200

### FOOTBALL AT DISCOUNT PRICE

A limited number of football reserved seat tickets are available at Personnel Activities.

Tickets are for both SC and UCLA home games.

Call 2784.

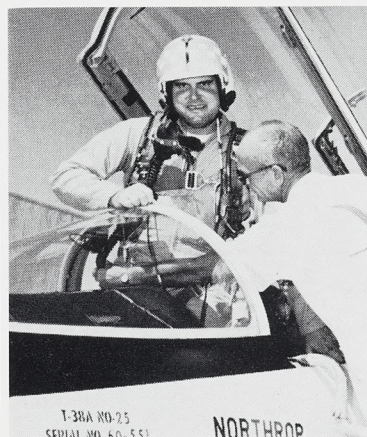
NORAIR NEEDS ENGINEERS

\$200 FOR REFERRALS

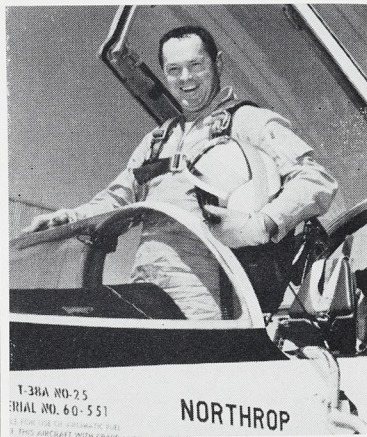
## Photo from La Paz



**THAT MARLIN MAN**—Ed Aguilar, Norair Office Machine Repair, went to La Paz and caught, not one, but two big fish, a 55-pound sail and a 77-pound marlin. The boat was the Raparco III, Captain Chuy. Using medium tackle, Ed wrestled with the sailfish for 20 minutes. The marlin proved less of a fight, coming to gaff in 15 minutes. Ed made the trip to La Paz by air. His first News-reported marlin was just last year—a 176-pounder. He is now back at his division typewriter chores. "Wait until next year," he says.



**READY**—Navy Commander Newt Kile, Standardization officer, VA126, NAS, Miramar, is checked in by Norair crew chief, Ernie Kane.



**COMMANDER** — Colonel Henley signifies approval of T-38 performance following his flight during Northrop demonstration.



**CHIEF OF STAFF** — Marine Colonel Robert J. Johnson, chief of Staff, Fleet Marine Force, Pacific, MCAS El Toro, climbs aboard.



**LET'S GO**—Navy Commander Clarence R. (Johnny) Johnson, skipper of VA126, NAS, Miramar, pauses for base photographer.



**PLEASED** — Navy Lt. Commander C. W. (Rosey) Roesser, executive officer, V-F124, NAS, Miramar, had a good flight in the trainer.



**OKAY**—Navy Commander W. B. (Bosco) Welch, executive officer, VA126, also NAS, Miramar, took the T-38 up for a trial.



**FLIGHT TALK**—Drury Wood, Captain H. C. Weart, VU-VR-VT Design officer, Bu-Weps, and John Couberly, Norair chief, Aircraft group, Marketing, talk about T-38 mission during Navy-Marine demonstrations at Miramar and El Toro. T-38 used on flights was Edwards based.





## RIDES WANTED

7 a.m. — 3:45 p.m.

PRAIRIE AVE. & 177TH ST., Torrance.  
Grace Watson, 370-2304. 2HIGHLAND & MARINE, Manhattan Beach.  
Charles Carev. ext. 1938, FR 4-3153. 2

8 a.m. — 4:45 p.m.

ARBOR VITAE & LA BREA, Inglewood.  
Carol Detro. ext. 1893, 672-7894. 5YUKON & 168TH ST., Torrance, Val  
Johnson. ext. 770. 5HAWTHORNE BLVD. & 190TH ST., Redondo Beach.  
Rachel Ann Pluth, 371-5782. 5EUCLID & KATELLA, Anaheim. Charles  
E. Dav. ext. 2527, PR 2-9313. 5

## NORAIR NEEDS ENGINEERS

## RIDES OFFERED

8 a.m. — 4:45 p.m.

EUCLID & KATELLA, Anaheim. Charles  
E. Dav. ext. 2527, PR 2-9313. 15

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

HEADBOARDS, 2 twin bed, champagne color, embossed vinyl, leas & box springs, \$25; mattresses, 2, to match. \$10. OR 7-6058. A

ALFA-ROMEO, 1957, high piston, special bearings, new tonneau cover, Spider, \$1000. Box 2001. A

VIBRATING CHAIR, reclining-type, \$65; dining room set, walnut, \$125; camera & flash, Aras 35mm, \$20; sofa, down pillows. \$75. 757-6953. A

BREAKFAST NOOK, red plastic; table black, formica top, \$25; pet quinea pig, brown & white, long hair, \$1. DA 4-7690. A

## EARN REFERRAL AWARDS

STOVE & REFRIGERATOR, GE, both pink. 2 ovens. Zero freezer. \$380. FR 5-8778. A

COUCH & CHAIR, \$40; refrigerator, \$40; washing machine, Kenmore, \$40; laundry cart, portable, has 3 separate bags. \$5. PL 6-0768. A

MGA ROADSTER, 1957, few miles, new tires & tonneau. \$950. EM 3-0639. A

RADIO, Craftsman, comp. to Scott or Fisher, C-800 AM-FM tuner/preamp, cost \$160, \$39.50; 3-spd chanaer, Webcor, dia/saph cartridge, plex cover, cost \$65, \$15. OR 4-0762. A

PUPS, Dachshund, 7-wks-old, black & tan, 1 male, 4 female, \$25 ea. YO 4-3201. A

PLYMOUTH, 1950 4-dr. sedan, recent rings & valves installed, new brakes, clutch, trans. & front end alignment good paint & seat covers, \$150. FR 6-6884. A

## REFER ENGINEERS

VOLKSWAGEN, 1959, AM-FM radio, heater, w/w tires, white, \$1100. 672-7894. A

BABY BED, small, \$10; training chair, \$4; bottle sterilizer, \$3; diaper pail, \$1; car seat, \$1; buaay, \$10; overstuffed chairs, green, \$7; brown, orange & tan, \$15; bed & mattress, 3/4-size, \$12; coffee table, Nomar, \$5. AX 3-0578. A

SEWING MACHINE, portable, Tailor-aid 3-yrs-old, straight stitch needle forward & reverse control, \$35. 324-6864. A

TRAILERS, 2, 5'x6', good for furniture moving, trash hauling, etc., \$10 ea. OS 9-7615. A

BED DIVAN, pullman, yellow navaa-hyde, \$99; bunk beds, one needs repair. \$10; Chevrolet Townsman, 1956 4-dr. station wagon, V-8 eng., auto, trans., \$530. FR 5-6095. A

BABY EQUIPMENT, bottle sterilizer, Hanksraft, automatic, electric, \$7; Cosco jumper, \$3; car bed, \$2; play pen, Thayer step-fold, \$5. DA 3-9389. A

## USE REFERRAL CARDS

LAWN SPRINKLER, walking, \$10. HA 9-2764. A

MONZA, 1962, white, 4-spd, stick, 7000 miles, orig. owner, \$2450. OS 6-6762. A

PUPS, AKC beagle, from field champion stock, easily trained for hunting or for show, \$35 males, \$30 females, WH 8-2774. A

PICK-UP TRUCK, 1955 3/4-ton Dodge, 4-spd, trans., r/h, heavy duty rear bumper, \$800. DA 4-1400. A

CABIN CRUISER, 16', Fine Craft, w/2 30 hp Mercury motors, bait tank, 8 life preservers, lights, alased & trailer \$895. DA 4-6203. A

## FOR SALE

ENCYCLOPEDIA, American Peoples, 27 vol. set & 16 vol. set of The Children's Hour, cost \$330, \$140 or encyclopedia set, \$120; Children's Hour, \$30. PL 6-0015. A

LOT, large, level view, Palos Verdes Estates, will consider terms, \$7750. FR 7-4146. A

STOVE, apt-size, gas, operating condition, \$20. 830-0578. A

DIVAN, 2-pc. sectional & matching chair, good condition, \$80. PL 6-7893 eveninas. A

SHOTSHIELD LOADER, MEC 400, 12 aa., high or low base shells, easy to use & fast, \$40; 12 aa. pump, vent-rib, adjustable choke, rubber recoil pad, \$55. OS 6-9593. A

VICTOR PHONOGRAPH, horned-type \$75; sewing machine, foot pedal, re-finished, made into a planter, \$15; antiques & collector's items; pictures. PL 6-5180. A

## BRING AN ENGINEER

PUPS, cocker spaniel, just right for Christmas, \$20. UN 4-7823. A

FOAM SURFBOARD, 8'2", 2-tone light green, good condition, \$40. FR 5-0208. A

LIQUOR CABINETS, matching, \$45; reclining chair, Berkliner, \$25; TV, 16" console, \$10. OS 9-5650. A

TABLE SAW, 8", \$25; bicycles, 2, boy's, 26", 1 lite weight & 1 heavy duty, \$10 ea. PL 5-4497. A

BICYCLE, boy's Deraillleur, \$35. OS 5-6081 after 3 p.m. A

GAS RANGE, Auto Lec, about 1956, \$45; washer, GE, about 1957, \$18.50, 377-4437. A

AIR CONDITIONER, large ARA, w/compressor, lines & attachments, used 1 season, fits any auto, cost \$349.50 \$175. DA 9-8960. A

CHEVROLET, 1956 2-dr., 6 cyl., stick shift, r/h, \$625. OR 7-8775. A

HOUSE, 3-bdrm., carpets & drapes, vicinity 133rd & Vermont, \$17,000. DA 4-3605 after 5 p.m. A

WELDING OUTFIT, gas, w/cart, no tanks, \$75; room cooler, w/stand, \$40. 676-2435. A

STOVE, gas, Maytag Deluxe, 42", stainless steel burners, rear controls, \$97.50. 295-9997. A

## \$200 FOR REFERRALS

SLIDE, 6', \$7.50; hobby horse, \$9.50; play pen, pad, \$11.50. PL 4-9637. A

BLUEPRINT MACHINE, Roto Lite, portable, prints up to 42" roll, \$95. 323-4283. A

JEEP, 1956, CJ-6 model, new engine, hubs many extras, \$1235. OS 6-6390. A

BICYCLE, new in factory carton, boy's, 26" Evans Viscount 400, headlight & rear parcel rack, \$40. OR 1-6692. A

CORVAIR, MONZA 1961, 4-dr., white w/red interior, bucket seats, r/h, w/w, EZI glass, w.s. washers, \$1745. GE 1-4735. A

GUITAR, 6-string elec., w/amplifier, \$70. OS 6-1085. A

## WANTED TO BUY

TILE, sewer or water. OR 7-5080. B

PIANO, small, exterior condition not important, \$100 or less. 422-2048. B

TELESCOPE, suitable for child astronomer. FR 6-5733. B

BOXING GLOVES, 2 pair, 6 oz.; light-meter. GR 3-1479. B

## FOR TRADE

BAR, w/2 stools, trade for gas stove in good condition or washing machine. 672-6143. C

## RENTALS OFFERED

EXECUTIVE HOME, in Palos Verdes, 4-bdrm., 2 1/2 baths, for lease, \$325 mo. FR 7-5350. E

APT, 1-bdrm., furn., twin beds, disposal close to beach & bus line, \$85 mo. FR 6-7361. E

APT., 1-bdrm., unfurn., large, near Northrop transportation, shopping center downstairs, sound insulated, carpets, disposal, \$75 mo. OS 5-9695. E

DUPLEX, 2 large bdrms., unfurn., w/aarage, disposal, 3 miles to Norair water-lawn paid child ok, near school available Oct. 15, \$100 mo. PL 4-1964. E

APT., 2-bdrm. w/w carpet, drapes, aarbae disposal, aarage, water and trash paid, \$98 mo. OS 6-2501. F

## PERSONALS

GIRL in 20's to share 1-bdrm. apt w/nool. OS 9-6883. I

## FOR SALE OR TRADE

REVERBERATION UNIT, for monaural or stereo, \$45 or trade for FM Multiplex. FR 8-3990. M

## REFER ENGINEERS

## AD, RIDE FORMS

Going My Way and BBSF forms are available from Company stockrooms.

Going My Way is Form No. 59-228. BBSF is Form No. 59-308.

## Tennis Club To Play at La Jolla

The NRC Tennis Club will meet with the La Jolla Beach and Tennis Club on November 10 and 11, at La Jolla, it is announced by John Potts, commissioner.

All matches will be doubles.

Tennis Club members, old timers and new timers alike are ready for a fine weekend of fun, says John. Tennis play, an invitation to stay at the Club at discount rates, plus the social side, bids to make this outing a best for Norair net and racquet folk.

Additional news on the tennis side, Bill Lurie, Norair tennis great, helped the U.S. retain the Gordon Cup during the recent International Lawn Tennis senior matches held at Seattle, Washington. High point of the matches was on the last day of play when Bill defeated Ralph Tailby of Kitchener, Ontario, 6-2, 6-4.

This was the fourteenth edition of the International matches for the Gordon Cup.

The United States has won all 14 meetings.

More tennis glory came to Bill in the Pacific Southwest tournament held at the Los Angeles Tennis Club last month. Bill won the men's senior division championship there.

## NORAIR NEEDS ENGINEERS

## BASKETBALL PRACTICE AT LEUZINGER

The Leuzinger men's gym is available to Northrop basketball players each Wednesday night for practice sessions, it is announced by Bill Greene, NRC commissioner. Time is between 7 and 10 p.m.

Bill also states that now is the time for plant aggregations to start planning their teams and to make firm preparations for the upcoming pre-season tournament.

## EARN REFERRAL AWARDS

## The Winners



**FROM PALMDALE**—Here is their tied-for-first, second in the playoff Industrial League softball team. Back row, standing from left, Messrs. Garrett, Casper, Campbell, Smith, Hamilton, Thomason, and Anderson. Front row, kneeling from left, Campbell, Turner, Hogarth, Green-slade, Jolly, Bevans, captain; and Goodman, manager.



**BOWLERS**—First place in the City League rolled at the Oasis Bowl, Palmdale was the team of, from left, Chuck and Mary Smith, Gib Goodman, president; Martha and John Vilarino.



**SECOND PLACE**—Team Number Two in the standing. From left, Gib Goodman, Marshall and Hazel McCain, and Mary Sutherland.

## NRC Trophy Time



**TWILIGHT GOLF WINNERS**—Photo shows 20 out of 34 top trophy men in the NRC Twilight League golf matches. From left, Larry Low, Rollie Pierce, Bob Abel, Bill Woo, Paul Green, Haig Asdurian, Tom Asahina, Bill Roberts, Warren Klauer, Joe Seman, Bill Brown, Fred Armstrong, Norair NRC president; Al Johnson, Nortronics ES&E NRC president; Elmer Noonan, W. F. Stebens, John Sanstrom, Ray Erlis, Bill LaManna, Bob Sanders, and Roy Jackson. Subsequent "Tournament of Champions" was won by Joe Seman and Bill Brown. Runners up were Bill Roberts and Warren Klauer, center, with beautiful clock trophies. League had 340 golfers participating.





# Northrop Norair News

Issued biweekly by Norair Division of Northrop Corporation • Wednesday, October 24, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, EL PASO

## A Fresh New Program



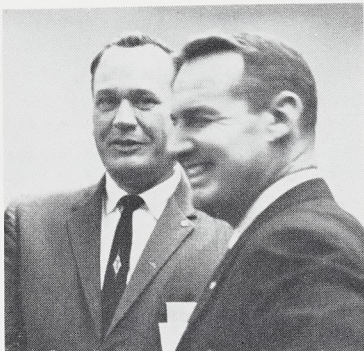
**SYMPOSIUM FOR YOUTH**—Hailing new Scout "Exploring" movement as important to the future of America, Corporate Vice-president and Norair General Manager Dick Nolan, right, assures William H. Spurgeon III, member, Explorer Committee, National Council, Boy Scouts of America, of all-out Company support.



**SPEAKERS**—Visitors from south coast Robert Kellogg, general superintendent, The Sturtevant Corporation, and John Myer, Hughes Semiconductor Division, talk new Scouting look with Welko Gasich, Norair vice-president and assistant general manager, Technical. Mr. Gasich was host for the gathering.



**AIR FORCE**—Lt. Colonel Leslie C. Robertson, project officer, Requirements Division, SSD; and Marshall Brough, manager of Sears Roebuck, Inglewood, photoed with Scout emblem.



**CHALLENGE**—John Warnick, District Scout executive, and Tom McCarthy, Norair manager, Administration and vice-chairman, Centinela District, BSA, confer on Explorer sponsorship.



## F-5 INTO PRODUCTION



**FOR MAP COUNTRIES**—Northrop's 1000 mile-per-hour jet fighter, the F-5, has been ordered into production by the U. S. Department of Defense. Destined for deployment to allied nations under the Military Assistance Program, this up-front fighter is shown here with a 4000-pound bomb load plus wing tip fuel tanks. Total F-5 combat load is 6200 pounds. The F-5, in both single and dual cockpit configurations, will be produced at Norair in Hawthorne.

## Gasich Host For Scout Symposium

Business, industry, professional and governmental leaders of the Centinela Valley met at Norair last week to hear Boy Scout officials outline a program for establishing "special interest" Explorer posts—a new movement in the Scouting field.

William Spurgeon III, who  
(Continued on Page 3)

**THE CITY**—Hawthorne official Bob Hartzell, fire chief, and Byron Bonnett, director, Management Research and Service, discuss city and company approach to this new look for young men of

America. Fire and police Exploring units have also proved headliners.

**FAR LEFT**—Mr. Gasich briefs Arnold Sorenson, chief Scout executive, Los Angeles Area Council, and Mr. Brough on Northrop's new hypersonic wind tunnel. Science has proved very popular with Orange County Exploring units.

**INTENT**—Thirty-five community, industry, educational leaders attended. Mr. "Explorer Bill" Spurgeon, vice-president, The Irvine Company who was speaking during photo, was moving force behind Exploring pilot program in Orange County. Success has been phenomenal. This new scout activity is getting under way in all 50 states.

## Letter Contract Orders Fighter, Norair Builds

The Department of Defense has announced that the U.S. Air Force has awarded Northrop Corporation a letter contract authorizing \$20 million initial production of F-5 supersonic jet fighters.

**The 1000-mile-per-hour twin-jet F-5, known as the Northrop N-156 during development, will become operational in selected allied nations under the Military Assistance Program. Initial deliveries are scheduled for mid-1964.**

The contract provides for production of single seat F-5A fighters and twin-cockpit F-5B fighters. Utilizing the same basic design, the two-place F-5B combines the combat capability of

the F-5A with training capability.

Developed specifically to meet the requirements of allied nations for a multimission supersonic fighter, the Northrop F-5 will replace older aircraft now in service.

**The F-5 is a triple-role fighter, capable of penetrating into hostile territory with more than 6000 pounds of bombs, rockets, missiles, napalm and other weapons. In its primary role as a tactical fighter, the F-5 will provide close support of ground troops, attack and interdiction of enemy communications and supply lines, and**

(Continued on Page 2)

## Pension Vesting Rights to All With 15 Years Service

Pension vesting rights, that all-important Northrop benefit that assures retirement income in the declining years, have been amended to include personnel in the younger age brackets. It is announced by Robert R. Miller, Corporate senior vice-president.

The new provision, recently incorporated into the Retirement Plan after approval by the Northrop retirement board and the Northrop Corporation board of directors, extends vesting to persons under age 45 who have attained 15 years of continuous service.

The already existing provision whereby vesting is granted to  
(Continued on Page 2)



ROBERT R. MILLER

Added pension benefits . . .





## Idella and Jim

Like all little girl babies, Janet was pink and pretty when she came into the world in 1935. Jim, her father, proudly passed out the stogies, taking all the credit, while Idella, typical mother, let him have his day. Yes, Idella and Jim Muse had their first wee daughter. Life took on a new meaning to the tune of healthy gurgles from the lively

By John B. Clark

miss who immediately took over the household.

The years passed and Janet took her place in society as an eager schoolgirl. Lunches were packed, buses boarded every school day, and for a spell things looked mighty promising. But soon report cards indicated that



Janet was "not as responsive" as her classmates. At a parents-teachers meeting, mother and dad were advised that special treatments should be given — that Janet

should receive "tests." The parents pondered—but why? Such things do not happen to folks like us! It is always the youngster down the street, across the way, or on the next block! But, here it is. Our girl is mentally retarded.

What to do about it? No time for tears. With understanding, patience, and much love, Idella and Jim went into action.

For two long years, Janet was tested and tested, taken from one doctor to another. In those days, around 1942-43, much less was known in the treatment of mental retardation than is known today. However, the Muse child did at-

tend special classes in public schools until she was 12 years old. Later, by her cooperation and good manners, Janet was accepted into higher grades. But, by the time she reached her sixteenth birthday, it was quite obvious that she could not accomplish the requirements of a third grader.

Another school had to be found. One was found in Compton where Janet was enrolled until she was 18. While academic progress left much to be desired, it was here that her family and new friends discovered that Janet had a very special gift—the gift of having little children love her. Today, at 27, Janet helps at this school, teaching the little ones to count, recognize colors, and, to the few who can learn, to tell time. She has found happiness in service to others. They all love her for there is no retardation in her love for them. Janet has found her work in the world because her parents, Idella and Jim, through their understanding and courage, met the problem head-on, helping her mould a good life out of what might have been a tragedy.

But they did not stop with Janet. Mr. and Mrs. Muse have given immeasurable help along with other parents in establishing two workshops in the local area where the mentally retarded find an opportunity for training and gainful employment. Through their own experience they have brought succor to so many others.

Idella, at Northrop since 1953, is a clerk in Manufacturing Program Planning, and Jim, who joined us in 1943, is a commercial artist in Graphic Services.

Janet speaks highly of her mother and dad—thinks they are mighty nice folks to have around. And so do we.

## F-5 for MAP Countries

(Continued from Page 1)

surveillance of enemy territory. The F-5 can operate from short, semi-prepared or unprepared fields in forward areas.

All F-5 fighters will be equipped

### DR. GAUME TO HEAD NSL'S LIFE SCIENCES

James G. Gaume, M.D., has been named to head the Life Sciences program at the Northrop Space Laboratories, Ludwig Roth, vice-president and manager of NSL's Research department, has announced.

Dr. Gaume will be responsible for directing and administering research in bioastronautics, bio-



DR. JAMES G. GAUME

dynamics, behavioral sciences and bioengineering.

ped to fire Sidewinder missiles. This armament combined with F-5's high rate of climb gives the fighter a highly-effective interceptor capability.

With aerial cameras and additional fuel tanks mounted in the nose, the F-5 will have the range and speed needed for battlefield and deep penetration photo-reconnaissance, even at treetop level. In addition, nose guns can be installed for armed reconnaissance.

High engine thrust, low weight and rugged construction give the F-5 its unique combination of battlefield durability and high multimission performance. Its takeoff weight varies from 12,000 to 19,000 pounds, depending on the combat load. Powering the low-weight airframe are two General Electric J-85-13 turbojet engines delivering the highest thrust-to-weight ratio of any jet engines in U.S. military service.

The F-5 fighters will be produced by Northrop Norair.

For the past five years, Dr. Gaume was associated with the Martin Company (now Martin-Marietta Corp.) having initiated Martin's research program in space medicine. In his most recent assignment as chief of Life Support Systems in the Denver Division, Dr. Gaume was responsible for the conceptual research and development of life support systems for manned space operations.

## Talon Models for Excellence



**OUTSTANDING AFOTC CADETS**—Upon completion of training classes at Williams Air Force Base, Ralph W. Quinn, Northrop Corporation technical representative, presented a model of the Northrop T-38 twin-jet pilot trainer to the outstanding cadet from each flight. From left to right are: Richard B. Bennett, Occidental College, Los Angeles; Larry J. Edgeman, University of Texas; Ernest L. Ener, Texas A & M College; Kim A. Karst, Colorado State University; James R. Norwood, Texas A & M College; Charles L. Meyer, Bowling Green (Ohio) University; Alfred H. Tichenor, Arizona State University; and Edward Woods, Tuskegee Institute. Williams was third base to receive T-38 airplanes. They arrived there during latter part of June.

## Air Force to Budget for Safety

A revolutionary contract provision permitting missile and space vehicle manufacturers to budget safety into their products at government expense is expected to result in fewer launching pad mishaps in the future, the Air Force's global safety chief has announced.

Major General Perry B. Griffith, deputy inspector general for Safety, USAF, told 400 persons attending the 50th Air Force-Industry Safety Conference at Riverside, California that when the provision is fully implemented, "We can ask for and expect safety from design board to target — what we have always preached!"

General Griffith disclosed that all ballistic missile contracts awarded since April 1 already are covered under a new Military Specification issued by the Air

Force. "The new specification covers contracts — aircraft, missiles, et cetera."

General Griffith explained that the new BSD specification establishes general requirements for systematized safety engineering applications of Air Force ballistic missile systems and is intended to assure optimum freedom from inadvertent and destructive mishaps. It outlines basic requirements to be met by contractors to achieve an integrated and comprehensive systems safety en-

gineering effort.

General Griffith has Pentagon responsibility for the prevention and investigation of all aircraft, ground, missile, and nuclear accidents throughout the Air Force.

His organization sponsored a three-day closed conference which highlighted electrical and mechanical safety problems in missile systems. Military, government, and industry personnel from the United States, Canada, and England were in attendance.

## Added Pension Benefit

(Continued from Page 1)

persons 45 years of age and over with 10 years continuous service remains the same.

### RIGHTS AT 33

With vesting granted to the younger age personnel, it is now literally possible to secure pension rights as young as 33, 18 being nominally the youngest a person could be employed on government contracts with the attendant security and insurance responsibilities.

Being vested means that if at the time of termination for any cause whatsoever, should age and service record meet either one of the two foregoing requirements, you will be entitled to receive, beginning on the first of every month following the 65th birthday, the retirement income earned up to the time you leave.

Other retirement clauses go a long way in protecting Northrop personnel in case of leave of absence or layoff, even though the individual is not fully vested.

These include military service with re-employment rights under Federal law. In this case benefits accrue based on earnings at the time military service begins.

### PROTECTION

Pension benefits are also protected during an approved leave of absence, and in case of layoff and return to work without loss of seniority. In each case, benefits remain to the individual's

credit, but do not accrue.

Credits in the Northrop Retirement Plan cannot be borrowed against.

Retirement can be as early as 55 years of age with 10 years of service. Benefits in the case of early retirement will be actuarially reduced.

The Northrop Retirement Plan was first started in August of 1952. The board has amended the Plan five times since then, each time increasing the benefits or making improvements vital to personnel. One of the most important changes occurred in 1957 when the Plan was changed from fixed to fixed and variable whereby a portion of retirement credits would be invested in common stocks in addition to corporate and government bonds and preferred stocks, and in this manner keep the retirement dollar in synchronization with the national economy.

The Retirement Plan maintains counselling service at each Division.

The Division recommends that persons should map their retirement plans early. There is an automatic preretirement interview scheduled for all personnel at age 63. At this time complete counselling is given and the many payment options are explained so that Northrop men and women can choose the method most suited to their particular need.

## Freedom Bonds

Via Payroll Deduction

Force Ballistic Systems Division, Inglewood, Calif. However, another new Military Specification being drafted by his Directorate of Missile Safety at Norton AFB, Calif., will be designed to cover all Air Force missile and space systems of the future.

"In fact," he said, "we envision the day when we will have a Mil-Spec requiring systems safety considerations in all Air Force

### Northrop Norair News

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CHARLES BRADFORD, Editor

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**ALL SEVEN**—Dad who works in Norair Quality Control; mama (Dorothy); Mary Ann, 19, who works in Data Processing; Mike, 18, El Camino College; Pat, 13; John, 10; and Coleen, 7, all of St. Francis Cabrini School on Imperial where this photo was taken. A happy busy family, the Cahills transplanted west when their hometown didn't seem the same after the war.

## Dick Cahill & Family Find a Busy Life Between Company, Community, and Church

"When the war was over and I went back to my machinist bench at the railroad, it wasn't the same. Strikes. Embargos. My pension rights were there. My seniority. It was the big thing I thought about during four years in Naval aircraft—PBV squadrons in San Diego and Miami—but the old job and the Midwest weren't the same.

"My dad and mother had moved to California. One day my wife Dorothy and I looked good at the picture. It was a time of change. We said let's go. We went. It's been California ever since."

This is Norair man Dick Cahill, Quality Control inspector in the weld shop.

Dick and his seven-member family; he, his wife, and five youngsters, are true products of postwar America. Which means change from the old surroundings, a move to the new industrial centers, new community patterns, emphasis on education for the children.

### JOURNALISM FOR MIKE

His oldest boy, Mike is in El Camino, majoring in journalism. Mike is also halfback for the Warriors. His oldest daughter, Mary Ann, 19, works for Norair in Data Processing. The others, Pat, 13; John, 10; and Coleen, 7, are busy with their three R's at St. Francis Cabrini on Imperial Highway.

Dick in one way or another, has been identified with welding, welding processes and welding workmanship since joining Northrop. "I heard about Heliarc," he said, "and I thought it was a wonderful development. For me, Northrop has always been tops in welding. The all-welded, all magnesium F-56 Fighter was before my time, but I heard plenty about it. The booms on the first Black Widows were welded mag. And today, our Nortobraz is making good progress in development of the exotics. Our work on the B-70 panels using North American's braze system has kept our capability in the front ranks, and it makes a man proud of his company."

Dick's record shows that he has been very active in the Suggestion Awards program. Starting as far back as 1951, his ideas have improved a wide variety of jobs from redesign of airplane throttle ends to all kinds of improvements in flash welding, with procedural suggestions thrown in.

### IDEA MAN

What is it in a man's makeup that bears this kind of accomplishment.

Dick grins. "I don't know. I never thought about it much. I don't go around studying things exactly. It's probably because in Inspection you are very sensitive to quality and workmanship. Problems always hurt quality. You try to help solve the problem. And this is where suggestions come from.

"And another thing that brings out ideas is if you like efficiency. We do all our own car repairing at home. Seven people get around quite a bit. School. Church. Store. Beach. If you are putting in new con rod bearings, a mistake costs you personally. It helps develop good working thinking habits."

Dick has made a total of 57 suggestions since working for Northrop. Twelve of his ideas have merited awards.

His last award winning suggestion was turned in as late as February this year.

Dick's highest award was for \$57.

Off the job, Dick's greatest interest is his family and the community.

### GOOD EXAMPLE

"I want to help make the community a better place for my children," he stated. "The pressures on young people today are terrific. It's hard to grow up. Influences everywhere. A continual process of adjustment. My boys and girls are fine youngsters. This is because we've tried to make them so. You try to set a good example. In your behavior. Send them to good schools. Just do your best. If you are sincere and really work at it. Things turn out all right."

Dick is not kidding when he says to work at it. St. Francis Cabrini, the newest Catholic complex in the area, was raised to its present fine status on a site reclaimed from a former commercial dump on Imperial Highway.

"We did just about everything to help lend a hand to make the project go. Dug ditches, poured concrete, carpentry work, all other kinds of construction work. Helped lay out the recreation area. And after it is finished, then is when your support is really needed."

Dick means that he is a little league coach and helps with the swimming team.

The Cahill youngsters have done well in athletics. Daughter Mary Ann was an AAU winner and junior Olympics contender in the 100-yard free-style and individual medley. Son Pat is himself a coach—of the "little kids" basketball and baseball at St. Francis Cabrini. The other two, John and Coleen are "little kids" themselves, but Dick thinks they will make out fine on the playing field. Son Mike, aforementioned halfback for the El Camino Warriors who received an injury that hurt his chances for this season starred in another department, that of selling newspapers. He was voted "Newsboy of the Year" for 1957 by the Gardena Valley News and treated to a pictorial spread in that up-and-coming publication.

### SWIMMING TEAM

Incidentally, Bishop Montgomery High swimming team where Dick is coach won their league in 1961.

But this is not the end of Dick's willing support in the church and community. He is a ready volunteer to escort the nuns on their public journeys and to accompany the priests on their rounds in the parish and on diocese affairs.

The highlight of his life took place two years ago.

"It was a trip," he said. "I went on vacation to Helena, Montana, to see my cousin ordained

## Nortronics Passes First Skybolt Guidance Tests

Initial sled tests for the Skybolt astronertial guidance system designed by Northrop Corporation's Nortronics Division have been successfully conducted, the Skybolt guidance project office has announced.

Additional testing is being conducted to further assure post launch capability and provide post launch accuracy information.

The tests, run at Holloman Air Force Base, New Mexico, proved mechanical and electrical integrity and basic inertial platform stability. The rocket sled tests simulate the boost acceleration environment which the system will see in service.

Brig. General David M. Jones,

deputy commander of the Aeronautical Systems Division, USAF, in charge of the GAM-87 Skybolt program, has called the successful sled test runs of great importance.

The Northrop Nortronics guidance package recently demonstrated precision navigation using the system's operational configuration. The flight and sled tests demonstrations mark the way for an early acceptance of the Skybolt weapon system into the USAF/SAC inventory.

The Northrop astronertial system is being developed and produced for Douglas Aircraft Company, Skybolt prime contractor, under direction of AF Systems Command's ASD.

## Day Shift Blood Bank To Visit, November 28

The Red Cross bloodmobile will pay Norair a visit for day shift personnel on November 28, it is announced by Charles Boyle,

chief, Personnel Activities.

Donors should get in touch with their organization clerks at the first opportunity in order that time of appointments and transportation can be arranged.

The program will be set up at the Product Display Building, halfway between Broadway and Crenshaw. Time is from 7:30 a.m. to 12:30 p.m.

The quota for this time is 275 donors, Mr. Boyle advises. All Northrop personnel are entitled to draw blood from the blood bank in time of emergencies.

Explorer Science post at their Semiconductor Division, and Robert Kellogg of The Sturtevant Corporation, who works with Explorers interested in architecture and construction.

Organizations represented included the U.S. Air Force, City of Hawthorne, North American Aviation, Inc., Garrett Corporation, Hughes Aircraft, Fairchild Stratos Corporation, Southern California Edison Company, Pacific Telephone Company, Southern California Gas Company, Sears Roebuck and Company, Harvey Aluminum, Inc., Security First National Bank, Los Angeles County Medical Association, Inglewood Bar Association, Los Angeles County Sheriff's Office, and Inglewood, Hawthorne, Morningside, Leuzinger and Westchester High Schools.

Norair is making plans to sponsor several of the new Exploring units in fields where boy interest runs high and where Division capabilities are unique.

## NRC TRAVELERS TO MEET AT CLUB ALONDRA

The NRC Travel Club has announced a special meeting on the Hawaii trip.

Date will be Wednesday, November 21 at the Alondra Club, 16411 South Prairie, Lawndale. Time is 7:30 p.m.

To help get the Gadabouts in the proper gadding mood a travel movie will be shown. There will also be refreshments.

As a reminder, the Hawaiian Holiday starts December 22 which means that Christmas is just around the corner.

Cost for the Hawaiian Holiday which includes jet fare, hotel accommodations, plus many, many other items of expense is \$365.

## Exploring

(Continued from Page 1)

headed a successful pioneering program in the establishment of such posts in Orange County, led an Orange Empire Council delegation which conducted the program.

The Explorer symposium was held in the Engineering and Science Center. Host was Welko Gasich, Norair's vice-president and assistant general manager. Technical Ranking Northrop officer was Dick Nolan, Corporate vice-president and general manager of Northrop Norair.

Mr. Spurgeon, vice-president, The Irvine Company and member of a pioneering Orange County family, explained that the "special interest" Explorer program brings together boys with specific interests and men with records of accomplishment in those special fields.

In Orange County, he said, Explorer units are sponsored by industry and government in the fields of law, medicine, aerospace science and engineering, merchandising, agriculture, banking, police work and many others. The Explorers, all boys of high school age, whet their career interests by devoting the bulk of their activity to attaining knowledge and proficiency in their fields of specialization.

Orange County speakers who augmented Mr. Spurgeon's discussion were Kingery Whiteneck, Corona Del Mar High School, who serves as an advisor to Explorer posts; John Myer, Hughes Aircraft and advisor to an Ex-

a priest. From Helena we went on to the Midwest. This trip was the greatest thing in my life. For the first time I saw how beautiful America was. The plains. The farms. The cities. Buildings. And the people. It was so beautiful.

"It is a time to count your blessings. Your family, your job, your community, your church. Your country. And then you know how much you have to lose.

"And losing it is a thing you would never let happen. Not as long as a breath of life is left."





## RIDES WANTED

7 a.m. — 3:45 p.m.

MANHATTAN BEACH BLVD. & INGLEWOOD AVE., Redondo Beach. Harriet Chaney ext. 1697, FR 2-6082. 2

BOLSA & GOLDENWEST BLVD., Huntington Beach. Stewart Berkis, ext. 2173, TW 7-4851. 2

7:30 a.m. — 4:15 p.m.

LONG ST. OR WEST BLVD. & 65TH ST., Inglewood. Marilyn Marshall, 1945 1965. OR 8-1339. 3

8 a.m. — 4:45 p.m.

HERMOSA AVE. & 16TH ST., Hermosa Beach. John P. Sanford, ext. 2151. 5

PIER AVE. & MANHATTAN AVE., Hermosa Beach. Fran Arata & Avis Hastings, ext. 4088, 663. FR 6-5362. 5

## RIDES OFFERED

7 a.m. — 3:45 p.m.

BOLSA & GOLDENWEST BLVD., Huntington Beach. Stewart Berkis, ext. 2173, TW 7-4851. 12

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

SUPER 88 OLDS, 1959 4-dr. h/top, power steering & brakes, auto. trans., low mileage, orig. owner, \$1900. OR 8-1762. A

FIRE BRICK, 80, new, 8¢ ea. PL 4-1964. A

SKI PANTS, 1 pr., women's, black, size 11, made in France, designed by Ernst Enael, cost \$40. \$25. CR 3-2194. A

GLASSWARE, crystal, 48-pc. set, \$36. DA 3-0979. A

STAUFFER TABLE & TIMER, \$100. OS 6-2162. A

BICYCLES, 24". \$10; 20", \$10. DA 4-6203. A

COTS, 2 metal folding-type, \$1.50 ea. OS 5-1347. A

BOAT, 16', fiberglass, w/steel trailer, good condition, \$275. EX 8-5966. A

COFFEE TABLE, black, w/glass top, \$10; lawnmower, 16", hand-type, \$5; panel door, natural finish, 32"x80", \$3; carpet sweeper, \$2. OS 6-7468 after 4 p.m. or weekends. A

PIANO, Baldwin upright grand, musicians' instrument, \$150. FR 2-5174. A

BOAT, 17' Glastron Crestflite w/trailer, seats convert to beds, 75 hp Evinrude, 10-mo.-old, \$2195. EX 1-2428. A

CHEVROLET IMPALA, 1958, 348" engine, w/w tires, r/h, Turbo-Glide auto., power steering & brakes, mint green w/match interior, \$1295. FR 4-1626. A

WASHER, Frigidaire, auto., \$35; range, Hot Point, elec., roto-grill, dual oven deep well, \$50. 324-7377 eveninas. A

FM TUNER, multiplex adaptor, AM tuner. Eico equipment, \$35 ea. or all three for \$90. 378-5348. A

HOUSE, 2-bdrm., garage w/den & utility attached, R-3 zoning, fenced fruit trees, \$114 mo. pymt., \$1250 down. 376-6169. A

RECLINING CHAIR, red leather, 6-mo.-old, \$65. Box 2101. A

HOUSE, near Vandenburg AFB, 4-bdrm., 2 1/2 baths, 2400 sq. ft., on 5 acres, near schools, stores in Santa Ynez Valley \$54,000. GE 8-0931. A

CAMPING TRAILER, sleeps 4 adults, 2-burner butane stove, water tank, \$225. FR 2-9433. A

WIG, human hair, 3-mo.-old, styled in a flip, headstand available, rea. \$100 \$65. DA 9-2298. A

AIR CONDITIONER, 3-mo.-old, Welbilt, window-type, \$200. HO 3-0953. A

SAFETY SHOES, 1 pr., low cut, size 9 1/2, worn twice, \$8. Box 2102. A

HI-FIDELITY TUNER, Sherwood, Model S-2000 II FM-AM; Jensen Tri-ette speaker enclosure w/3-way crossover at 600 CPS & 4000 CPS, walnut finish, \$150. PL 7-6831 after 6 p.m. A

CHEVROLET EL CAMINO, 1959, r/h, pwr. steering & brakes, bia engine, auto. trans., 4 bbl. carb., 5 good w/w tires, seat belts, \$1800. 754-0660 after 6 p.m. A

VOLKSWAGEN, 1961, black, all extras, \$1595. GL 6-8559. A

SWING SET, large, 2 swins, 1 bar, 1 dble. swing, slide, \$20; dress form, size 14-16, \$5. FA 0-2862. A

CONTOUR CHAIR, green, reclining, \$35. DA 7-9084. A

## FOR SALE

HOUSE, 2-bdrm., 1 1/2 baths, 22'x24' rumpus room w/Armstrong cork floor wet bar, 10' wide floor to ceiling Monterey fireplace, w/w carpet, on extra large lot under full sprinkler system divided rear yard, standard-size shuffleboard, pina-pona, covered patio, built-in bar-b-q, lighted waterfalls w/still pool, 8 kinds of fruit trees, shade trees, many planters, shrubs & roses, 3 miles from Norair Plant One, \$19,950. DA 9-8960

CAR COOLER, water-cooled, can be used as house cooler, \$20.00. OS 5-6081 after 5 p.m. or Saturdays. A

TV, 1958 Packard-Bell, blonde, low boy console, 21" screen, \$60. FR 5-9640. A

HOUSE, 2-bdrm., View Heights, lae, patio, brick fireplace, bar-b-q pit, redwood encl., w/w carpets, newly decorated, lot 57'x157', dble. garage, laundry room, \$17,200. AX 1-5405. A

TRAILER, 6', 2-wheel-type, good tires, \$30. OS 6-3090. A

REFRIGERATOR, Philco, 9 cu. ft., auto. defrost, top freezer, 1954, \$75; electric range, Philco, 4-burner, auto. oven control, \$50; dishwasher, Lady Kenmore deluxe, portable, auto., holds service for 12, \$100; boat, 16' Chris Craft, trailer 25-hp Johnson, semi-cabin, 6 life jackets \$450. OS 9-2110. A

HOUSE, near transportation, stores & schools, 3-bdrm., den, breakfast room recreation room, dble. garage, workshop 1 1/2 baths, 2385 sq. ft., carpets, drapes, sprinkler system, water softener, kitchen wired for electric range, Morninside location, \$29,900. PL 1-2466. A

GUITAR, electric, w/amplifier, \$70. OS 6-1085. A

DINETTE SET, chrome, table 36" wide opens to 54" long w/leaf, 4 chairs \$10. NE 5-0878. A

BSA MOTORCYCLE, 1956, Bucco saddle bags, windshield, full road equip., \$375 FR 1-1445. A

GAS RANGE, 40" Gaffers & Sattler white w/chrome top, center grill, rotis serie, clock, timer, retail price \$425, \$175 DA 3-7349. A

PONTIAC, 1955, 4-dr, power brakes & steering, good tires, \$425. OS 5-1967

DODGE LANCER, 1961, 4-dr, stick shift 22.5-mpg, less than 15,000 miles, \$1500 or best offer. 839-5693. A

AIR CONDITIONING UNITS, 3, window-type, Chrysler Airtemp heat pump Mathis, Truescold, \$75 ea. 832-7148. A

MOBILE HOME, 31', air conditioned, will finance, close to Plant One, \$1995. OS 5-7394. A

PLYMOUTH, 1953, 4-dr., 6-cyl. stick shift, radio, EZL glass, 1 owner, \$200 VE 9-6331. A

BABY CRIB & MATTRESS, \$15; 2 choice lots, Grace Lawn section, Green Hills Memorial, San Pedro, \$1300 value, \$700 PL 5-0947. A

## WANTED TO BUY

POWER MOWER, under \$30, or hand mower under \$10. OS 9-5650. B

BINOCULARS, 7x35. OS 9-6765. B

VIOLIN, junior-size, FR 7-3744. B

GAS STOVE, w/oven, in good condition recent model, must have by Nov. 4. OS 9-7656. B

## RENTALS OFFERED

HOUSE, small, 2-bdrm, unfurn., stove & refrigerator available, adults only, 1 mile from Norair, \$80 mo. OS 6-8283. E

APT., bachelor, furn., utilities paid, near transportation & beach; city, ocean, & del Rey Marina view, 1 person, \$135 mo.; 2, \$150 mo. EX 8-3840. E

HOUSE, 2-bdrm., aarbaae disposal, corner fireplace, hardwood floors, fenced patio, & aarbaae, 2 children OK, near Inglewood Ave. & Rosecrans, \$100 mo. OS 6-0695 after 5 p.m. E

ROOM, lae, bdrm. in home, near Rosecrans & Vermont, \$40 mo. DA 4-2205

HOUSE, 3-bdrm., 1 bath, small fenced yard, water & trash paid, disposal, tile bath & kitchen, near schools Northrop shopping center, \$125 mo.; apt. 1-bdrm. downstairs, disposal, lae, closets, sound insulated, car ports available, adults \$75 mo. OS 5-9695. E

HOUSE, 2-bdrm., w/large fenced yard & aarbaae, near plant hardwood floors disposal, tiled stall shower, \$90 mo OS 6-1574. E

APT., 2-bdrm., modern, w/w carpet drapes, aarbaae disposal, therm. heater, TV outlet, aarbaae, \$96.50. OS 6-2501. E

## RENTALS WANTED

GARAGE, near Norair, for storage of furniture & household goods. DA 9-7796.

## FOUND

NORTHROP 15 YR. PIN., owner can claim at Larry's Cleaners, Hawthorne. K

## PERSONALS

WE WISH to thank our fellow employees of Northrop for the thoughtfulness extended to us in the loss of our husband & father, Curran "Jim" Lynch. MRS. LOUISE LYNCH & SON, WILLIAM

MEMBERSHIPS available in A & E Flying Club based at Hawthorne Airport, Cessna 140, \$4; 170, \$6; 172, \$6.50; Mooney \$8; Bonanza, \$10, dues \$12 monthly nominal initiation fee. DA 4-2992 or FR 5-6751. L

## NRC CAMPERS TO NOJOQUI FALLS

The NRC Camping Club will shove off for Nojoqui Falls for a weekend campout November 3 and 4, it is announced by Max Douglas, Norair commissioner.

Nojoqui, pronounced Nohowee according to Max, is 40 miles north of Santa Barbara in the mountains, 17 miles from Lake Cachuma and only six miles from that "whatnot and knickknack

capitol of the world" the Danish village of Solvang. Also known for its good berry tarts and other pastry fare.

Cost of the Nojoqui outing is 50 cents a person payable at the park. There is an overnight camping cost of \$1 a family.

Campers should bring their own table service.

Reservations are required for

this trip and can be made by contacting Personnel Activities ahead of time. Personnel Activities also has trip maps.

Max states that a meeting will be held at Nojoqui in conjunction with the campout which will take the place of the regular monthly get-together.

## LUPU SALDANA TO TELL ALL FOR SURF CLUB

John Pawlicki, Norair commissioner, Surf Fishing Club, has scheduled Lupi Saldana, outdoor columnist for the Los Angeles Times, for the next club meeting which is set to take place November 6, 7:30 p.m. at the Norair Product Display Building.

Mr. Saldana will show films from his personal library on Salton Sea fishing together with commentary. There will also be question and answer sessions which means that certain bountiful locations might be revealed.

Refreshments will be served, says John, and one and all at Northrop are welcome to attend.

## Mike Turney Shoots 145 To Win at Singing Hills

The NRC Singing Hills golf tournament held on the weekend of October 6 and 7 was won by

## PRESEASON GETS UNDERWAY SOON AT LEUZINGER

Team entries for NRC basketball season tournament are now in order, says Bill Greene, commissioner.

Play starts Wednesdays and Saturdays at Leuzinger with the first game scheduled for Saturday, November 3.

Rosters and individual signup forms are available at Personnel Activities.

## Buy Bonds

All personnel are eligible plus husbands of wives who work here.

The regular season league play will start as soon as the tournament is completed.

Form a team, says Bill. This is going to be fun.

Mike Turney with a 73 and a 72 for a 145 two-round total, it is announced by Tom Williams, commissioner.

Overall low net went to Dan Scheick who scored 137 when adjusted for handicap.

First flight went to Paul Wierk with a 64. Second flight was won by Don Warner with a 68. Third flight, Bill Carlberg, 71. Fourth flight, May Hawkins with a 70.

Prizes consisted of gift certificates, golf balls and transistor radios which last were awarded to the ball closet to the pin on the 11th hole, each day.

Next tourney scheduled will be played at Ojai, states Tom. This will be on Saturday, November 17 with tee off time at 7:30 a.m.

Green fees are \$6 plus 50 cents prize fund for a total of \$6.50. There is a limit of 100 golfers.

Signups will be taken at Norair Personnel Activities on Monday, November 12, 8 a.m. on a first-come-first-served basis.

The Ojai Inn plus swimming pool, putting green and dining room will be available to all golfers and their families.

## Safety-Conservation Committee



**NEW MEMBERS**—Workmen's Safety-Conservation Committee with new members for current six-months term is composed of from left, G. H. Atkinson, jr., L. Castelli, K. L. Tary, W. E. Morrison, chairman; Pauline Quast, J. W. Markert, Anthony DeCarlo, Ruby Soderlund, T. R. Stinson, G. C. Putnam, Francis Glasser. Members not shown, J. R. Cote, J. U. Salazar, and Frank Hoffman. Committee is a first-line of defense operation to insure that Northrop Norair is a safe place to work. Because of close contact with the shop, it has repeatedly proven to be one of the most effective tools in the safety program. Membership is cross section of manufacturing and supporting organizations of the entire Hawthorne facility. Meetings are held monthly. Working in close association with the above group is the Foremen's Safety-Conservation Committee. Both committees serve and support the General (management level) Safety-Conservation Committee.





# Northrop Norair News

Issued biweekly by Norair Division of Northrop Corporation • Wednesday, November 7, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, EL PASO

## Jones Commends Personnel For Company Performance

Warm appreciation for the "excellent performance of the men and women of Northrop"



THOMAS V. JONES

... Warm appreciation for growth and performance was expressed by President Thomas V. Jones in Northrop

Corporation's current annual report.

A copy of the report will be distributed within the next few days to all Northrop employees.

The annual statement shows the Company had an outstanding 1962 fiscal year. Sales for the fiscal year ended July 29, 1962, amounted to \$347,460,547, an increase of 30 per cent over the previous year. Net earnings for the year were \$9,051,323, an increase of about \$378,000. This, after taxes, represented a return of 2.6 per cent on sales.

The report notes that the number of employees increased from 16,500 in 1961 to 20,000 in 1962 and that Northrop products and services are now used in more than 22 countries, U.S. territories and possessions.

"The capabilities of the men and women of Northrop and its subsidiaries are the Company's (Continued on Page 2)

## Division Awarded R&D in Columbium and Moly

A \$435,000 U.S. Air Force brazing development program to explore the use of exotic columbium and molybdenum metals for aerospace vehicles is underway at Northrop Corporation, the Company has announced.

Under contract to the Manufacturing Technology Laboratory of the U.S. Air Force Aeronautical Systems Division (ASD), Northrop Norair will develop manufacturing methods and processes for joining columbium and molybdenum alloys into large, high-strength honeycomb sandwich panels.

Northrop Norair, the first to use high intensity quartz lamps for aerospace brazing, will use its automated Nortobraz radiant

**BRING AN ENGINEER**  
brazing system to manufacture the panels in both heat shield and structural configurations.

Materials evaluation and diffusion bonding of honeycomb cores will precede fabrication and brazement. Testing and structural analysis will follow.

Principal concerns throughout the program will be strength and thermal characteristics of the panels and determination of manufacturing techniques.

Columbium and molybdenum.

## COL INCREASE FOR HOURLY

Northrop Norair hourly rated personnel received an increase of 2 cents an hour, effective November 5 as a result of a rise in the Bureau of Labor Statistics' Consumers Price Index, it has been announced by Dick Nolan, Corporate vice-president and Norair general manager.

**USE REFERRAL CARDS**  
September 15, 1962 reflected a reading of 130.2, a rise of 1.0 above the index for June 15.

potentially ideal metals for spacecraft and high-performance structures, are members of the small group of refractory metals. As such, they are strong and highly heat resistant, but heavy and difficult to work. Columbium, which can be welded, has a melting point of 4379 degrees Fahrenheit and molybdenum, which has never been successfully welded by normal shop equipment, melts at 4730 degrees Fahrenheit.

Northrop Norair will verify data on molybdenum and columbium alloys by tests of flight temperature limits, maximum time at these limits, thermal stresses, and efficiency of protection. (Continued on Page 2)

## Breakthrough In Antennas At N-Ventura

A new concept in designing low-profile antennas that will operate in all frequency ranges has been developed by the Northrop Corporation Ventura Division.

Known as the Directional Discontinuity Ring Radiator (DDR), the Northrop configuration is circular in design and offers a height reduction of up to 30-to-1 over conventional vertical tower antennas now in operation.

**NORAIR NEEDS ENGINEERS**  
This revolutionary advancement in antenna design can range in size from six inches to more than 5000 feet in diameter and from two inches to 300 feet in vertical height, depending on application. Present-day requirements for vertical antennas exceed 1000 feet in height. Vertical antennas are (Continued on Page 2)

## F-5, ONE OF MOST IMPORTANT NORAIR AWARDS, SAYS NOLAN

WORLD AMBASSADOR FOR COUNTRY AND COMPANY

The F-5—

It is one of the most important assignments ever awarded this Division.

A "10-year" airplane at least. It will be a Company ambassador in far lands.

Its pilots will speak many languages.

Our logistics for this system will have global capability.

Project team excels in aerospace know-how.

**Corporate Vice-president and Norair General Manager Dick Nolan made the foregoing points in discussing the F-5 contract with the editor of the Northrop Norair News.**

"The letter contract was finalized and signed in Dayton," he stated. "Preliminary negotiations with Tom Jones, our president, taking an active and untiring interest were held in Washington. Many visitors from our own Government and from user nations overseas came to Hawthorne to study and evaluate the design and configuration. We won the contract over severe competition. That we did so, is a credit to

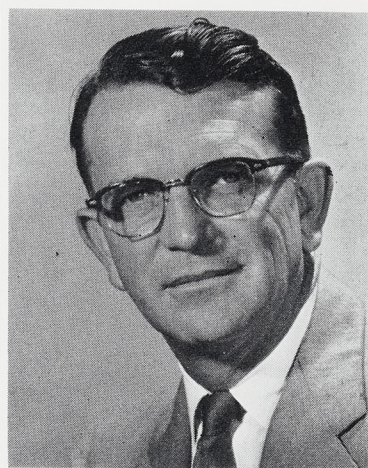
all who had a hand in the project, and there were many."

Mr. Nolan continued, "The F-5 business is one of the most important assignments to be awarded this Division. It ranks with the Black Widow, the Snark, the F-89, and the T-38. The F-5 will see service throughout the world. Its pilots will be men from selected allied nations in the MAP program. Different languages, different stages of technological understanding.

"We must build a reliable, durable, trouble-free fighter. On schedule and at low cost. The F-5 will carry our name. It will be an ambassador. The users of this airplane will form their opinion of our country and our Company by how it stands up."

"An airplane is no better than its support," Mr. Nolan said. "We cannot have F-5s on the ground for lack of spare parts or tech-

nical men who understand maintenance procedures. This brings up our logistics program. For the



DICK NOLAN

Logistics for global extremes

F-5 logistics must be global, fool-proof and self-sustaining. Jungle, desert, mountains, even islands. (Continued on Page 3)

## The "Eyes" Have it—Report Shows Norair a Safe Place

Your eyes at Norair, statistics show, are over three times safer than in the average aerospace company, it is announced by John B. Clark, Division director of Industrial Relations and Security.

Eye accident figures, recently released in a joint report for the industry, show Norair far and away one of the safest places to be where eyes are concerned. The Division presently has 65 members in the "Wise Owl Club" which means that had these 65 not been wearing safety glasses eye injuries would have been extremely probable.

Stated Mr. Clark, "The aerospace industry is fast moving.

Materials, conditions, assignments, manufacturing methods, tests, vary from day to day. The eye record means that our safety systems match the tempo of Norair. We are proud of our standing."

Lee Johnson, Norair chief safety engineer, gives credit to the strong support given the Division's safety program by foremen and their production teams in the shop. "The Norair rule which specifies that persons must wear safety glasses everywhere in the factory except in offices and aisles, helped us establish our fine eye safety showing," Mr. Johnson said. "But unless every-

(Continued on Page 2)

## NEWS BRIEFS

**LAMINAR FLOW CONTROL STATUS**—Don Warner, manager, LFC Demonstration Airplane Program department, advises that trailing edge and leading edge LFC wing assemblies have now been joined with the main structural box. The left-hand wing is due out of the jig day after tomorrow, November 9. Right-hand wing will be out November 17. Wings will then be joined into one major assembly. A special "cherry picker" will lift them out of Crenshaw high bay and onto the apron. The fuselage will be towed out and wings and fuselage will be joined. This major step will take place in approximately mid-December. Airplane will then move back into the high bay for final installation of operating equipment. Project is on Air Force schedule, Mr. Warner states, with first flight date due early in March.

**T-38 LOGISTICS**—Brigadier General Lawrence F. Loesch, director, Maintenance Engineering, DCS/S&L has visited Norair for briefings on Division capability and for discussions on the T-38 logistics program status. General Loesch was greeted by a team of Division officials headed by Corporate Vice-president and Norair General Manager Dick Nolan and Division Vice-president and Assistant General Manager, Operations, Bob Lloyd. Interesting highlight in the presentation to General Loesch: Hardware deliveries have been on schedule for 74 months; all contract commitments including R&D have been on schedule for 34 months.



# Individual Enterprise

In this day of wide conflict of ideologies, we stand firmly in defense of what we call "private enterprise". And well we should, for our country remains the greatest in the world. American

By John B. Clark

private enterprise offers the opportunity for anyone with ability, initiative and determination to realize his ambitions.

Where would you say private enterprise starts? I have asked myself this question many times



and come up with but one answer. Private enterprise starts with the individual who invests his time and energy, truthfully his capital, in a company of his own choosing. It starts with that same person who places his skill, truthfully his product, upon a competitive basis in a free labor market. Yes, private enterprise starts with the individual and under this concept the scientist, engineer, bench machinist, or clerk typist becomes as great an entrepreneur as was Andrew Carnegie. This is the essence of our greatness. It is one of the ingredients of our democracy which stands as a formidable bulwark against some foreign ideologies of which we want no part.

At Norair we recognize the need and desire of each person to bring forth his best talent on the job at hand and his natural desire to progress.

Dick Nolan puts it this way, "I believe everyone at Norair wants to do the best job possible. It is our responsibility to help

him do so." Creating favorable working conditions and promoting mutual understanding of each other's problems are basic requirements in establishing the climate in which individual enterprise can best develop.

Take, for example, the Norair Education and Training group. Here we offer "on the job" training, supervisory indoctrination, and extensive familiarization courses in a wide area of specialization. In addition, we provide financial refunds to those seeking academic advancement.

Bob Rolfe, chief, Education and Training, and his staff administer a well-rounded program aimed at increasing our capabilities. Their suggestions and counsel are yours for the asking. Bob points out that personnel development is basically *self-development*. The principal responsibility for accomplishing it rests with those concerned. Hundreds have been learning both on and off the job and have enhanced their value to themselves and to the Company. In doing so they have increased their "capital assets".

Tom Jones has told us, "The capabilities of the men and women of Northrop are the Company's most important resource;" and further that "in our highly competitive economy we can no longer be 'just as good'—we must do better than others." To do this we must never cease learning ways and means to improve our performance on the job and to acquaint ourselves with the newest techniques of our profession or trade.

Real security for ourselves and the future success of Northrop rests upon a foundation of individual capability. Our future can be as bright as we wish to make it.

## At Norair—"Eyes" Have it

(Continued from Page 1)

one obeys the rule, eye safety efforts would be fruitless. Norair supervision make it a personal responsibility to see that eye protection is a 100 per cent program. They are quick to remind those without glasses what the regulation is."

Safety glasses are available at no cost at all tool cribs. Northrop people are asked to check out a pair and wear them in production areas.

Norair has a good safety record in other than the eye injury category, having equalled or bettered the industry for many years in lost time accidents, highway safe driving for Company vehicles and others. The awards, plaques and testimonials received would fill a good-sized room.

Several safety campaign programs put in force by the Division have caught on nationally. These include "Courtesy Equals Safety", which became a Southland drive under the slogan "Courtesy is Contagious", and "Safety is No Accident", a Northrop Norair News editorial explaining Company safety policy that received special commendation from the Department of Labor.

Safety recently received one of the most important assists in the history of the Company through a joining of Safety and Plant

Protection forces under the administration of the chief of Plant Protection and Safety, Bill Parker.

Fire prevention engineering, and safety systems now have full benefit of Norair's Plant Protection Control Center, a split-second reaction communications installation that maintains constant contact with all areas of the plant, and the Hawthorne City Fire and Police Department as well.

The City Fire Department can reach a Norair emergency in as little as two minutes. They are forewarned even as they are under way as to the nature of the trouble, special equipment needed if any, what kind of blaze in case of fire.

The "Safeguard" report now compiled in Chief Parker's office, is something new at Norair. It is in the form of a questionnaire sent to all operating organization heads and when tabulated forms a comprehensive study listing all marginal safety, fire, and work conditions throughout the plant. The "Safeguard" report is updated and kept current at regular intervals. Copies go to management and are on file for quick reference in the Plant Protection Control Center.

It enables Plant Protection and Safety personnel to keep a constant check on how hazard-free we are at all times.

## Annual Report

(Continued from Page 1)

most important resource. It is their excellent performance that makes it possible for us to respond successfully to our opportunities," Mr. Jones said.

"The management expresses its warm appreciation for the continued devotion of our people to the welfare and growth of Northrop.

"The year marked substantial progress in the long term directions set for the Company more than five years ago," Mr. Jones said. "The seven-year analysis of the Company's performance during the period 1956-62 provides an interesting perspective in which to view the year's results. For example, it shows that sales in the past fiscal year, highest in the Company's history, exceeded the previous peak of \$322,500,000 reached in 1956.

**\$200 FOR REFERRALS**  
More significant, however, is the much broader base of its business now as compared with 1956. Our 1956 sales depended largely on the F-89 interceptor aircraft. Today, in contrast, our business covers some 15 product areas and several times that many technical programs, ranging in size from under \$1,000,000 a year to over \$50,000,000 a year," Mr. Jones said.

## FAA Asks for Assistance in New Survey

Northrop people who are certified as aircraft mechanics, repairmen, or authorized inspectors have been asked to assist the Federal Aviation Agency in a survey to bring flight standards information up to date.

Max Stanley, chief, Flight Support Operations, advises that FAA questionnaire forms are available at Personnel Activities. Forms are entitled "1962 Survey of Maintenance Airmen, FAA Form 3098 Temp (8-62)". The survey got under way nationwide November 1 and will be concluded November 30.

In its message to certificate holders, the FAA states:

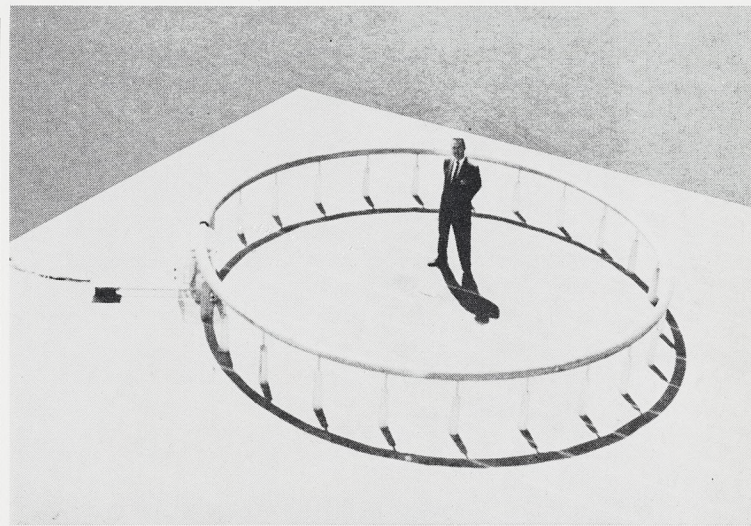
"The Federal Aviation Agency is conducting a study of the Maintenance Airman Certification program to determine industry needs in this area, and to align the program with the responsibility for maintaining modern complex aircraft.

"Since the certification requirements have remained relatively unchanged for the past 35 years, it is quite obvious that something could and should be done to update these requirements.

"To accomplish this study, we need information on the maintenance airman's functions, duties, responsibilities, and training. You can assist us in this study by completing a questionnaire and returning it promptly.

"Time is of the essence, and we would like to begin analyzing answers as soon as possible. Therefore, we ask that you complete and return questionnaires no later than November 30, 1962.

"Thank you for your prompt cooperation."



**MAJOR BREAKTHROUGH IN ANTENNA DESIGN**—Known as the Directional Discontinuity Ring Radiator (DDRR), designed and developed by Northrop Ventura, new antenna offers a height reduction of up to 30-to-1 over vertical antennas now in use. The circular antenna can range in size from six inches to over 5000 feet in diameter and from two inches to 300 feet in vertical height. A three-foot diameter DDRR, four inches in height, can be installed easily on cars, trucks and other vehicles of mobile communication. During recent tests, a model of the new antenna, two feet high, equalled the performance of a 60-foot high tower antenna.



**DDRR SMALLER SIZES**—Those with vertical height of less than four inches are extremely well-suited for smaller applications.

## Research Contract

(Continued from Page 1)

Electronic controls, an important part of the Nortobraze process, provide continuous, localized, precise control of temperature and time to fractions of degrees.

Thirty-six test panels will be produced by Northrop, half in columbium alloy and half in molybdenum alloy. Heat shield (18" x 18") and structural (24" x 36") configurations, flat and curved, will be made of each alloy.

Structural test panels will be mounted in a jig to simulate actual airframe applications. The heat shield panels will be tested at operational temperatures of present and future aerospace vehicles, including typical reentry temperatures.

All panels will be submitted to ultrasonic testing and X-ray and minimum quality control standards will be established.

Norair's Manufacturing Research and Development group, headed by Barney Gaiennie, will carry out the development program.

## Offices

(Continued from Page 1)

Boston Corporate District Office—reporting to the Eastern Regional Office.

San Antonio Division District Office—reporting to Norair Division.

Omaha Division District Office—reporting to Nortronics Division.

Ft. Huachuca Division District Office and El Paso Division District Office—both reporting to Ventura Division.

## Northrop Norair News

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NORAIR DIVISION

Published every other Wednesday

CHARLES BRADFORD, Editor

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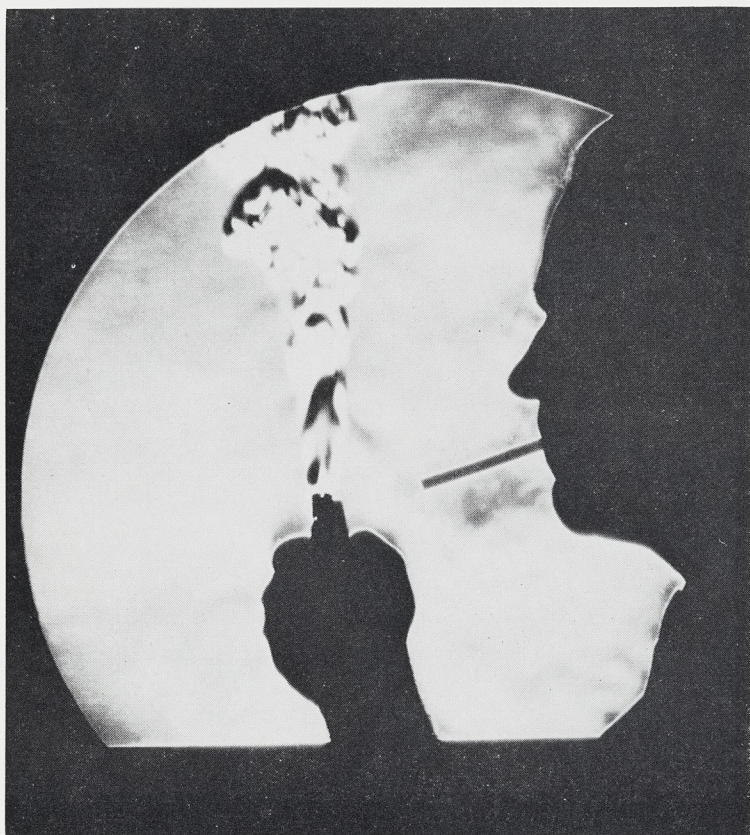
## Tunnel Optics "See" Human Heat



**SUPER OPTICS**—Northrop Norair's new hypersonic wind tunnel, now in a program of shakedown tests, demonstrates the precision as well as exotic quality of its optical system. Here, as illustration, camera catches shadows of body heat surrounding a human hand posed in hypersonic test section. Tunnel, capable of Mach 14 speeds, was quite naturally quiet at the time photo was taken. Schlieren optical system was designed by Norair Research Laboratories group, built by Nortronics. During actual test runs, Schlieren system reveals shock waves, turbulence or other gas density discontinuities as flow passes around model. Computers rapidly multiply this evidence into full scale conditions for aerodynamic study.



**THE HAND AND ITS OWNER**—Harry Graves, engineering specialist, was the subject whose hand was used in photo above. It is estimated that the tunnel optical system is so precise that it could register action of temperature differences down to one degree. However, purpose of the facility is to conduct research on Norair's new multi-Mach and space age designs. "Heat" photos only serve to show advanced state of wind tunnel art at Norair.



**THUNDERSTORM**—Heat from a cigarette lighter looks like this through tunnel optics. Tunnel has many new features, one of which is free-jet cabin with automatic model ejection and attitude control. This component shields model from destructive forces of start and shutdown loads in addition to providing extensive range of testing angles.

## AIA Meeting At NSL in Safety Study

Dr. C. F. Lombard, head, Northrop Space Laboratories Biodynamics Laboratory, was chairman of a meeting held at NSL last week to determine safety requirements for space chambers.

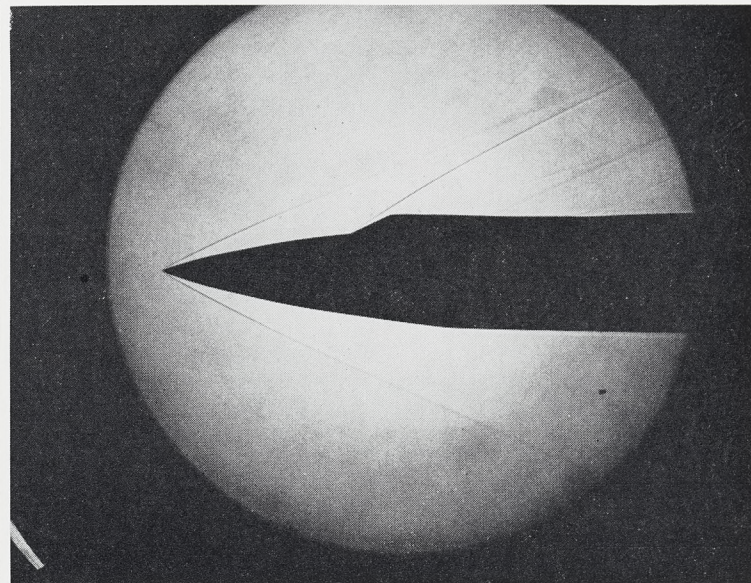
The meeting, under the auspices of the AIA's Aerospace Research and Testing Committee with their Project 14-61 specialists, brought aerospace scientists and engineers from all over the United States for the purpose of establishing preliminary safety guide lines in construction and operation in this new generation of test equipment.

Other NSL people participating in the meeting were Dr. James E. Gaume, head, Life Sciences; Dr. Perry Close, Biodynamics Laboratory; Doyle Henderson, Editorial Staff; and Warren Schreyer, chief, Space Simulation Laboratory.

Royal Jackman, Norair chief, Engineering Laboratories, is Northrop Corporation representative to the ARTC committee. He has also been a past national chairman of the group.

Mr. Jackman who addressed the meeting recalled that 12 years ago Dr. Lombard, then with the University of Southern California, was instrumental in establishing the first safety standards for altitude space chambers. A report issued at that time titled ARTC-1, "Safety Standards for Low Pressure Chambers" is still in use.

"The technology has advanced from high altitude chambers to space chambers in 12 years' time," he continued. "When Dr. Lombard joined Northrop two years ago, he found us working on the physical and operating requirements of a large space chamber. His interest in establishing safety conditions for the functioning of men in chambers under simulated space flight environments led to the establishment of this ARTC project in which both industry and government are cooperating."



**FIRST PHOTO**—This is first print of first test picture taken in the hypersonic facility. Photo, as are others in this series, is a shadow graph. It shows a generalized configuration demonstration model. Tunnel conditions: The two-foot supersonic circuit; Mach 3.02 (2200 mph); stagnation press 75 psia; Reynolds number  $12 \times 10^7$ /foot.

## Nolan on the F-5

(Continued from Page 1)

will be routine. F-5 support has to beat conditions like this to the punch."

The F-5 is an airplane with "designed in" future. "Today," Mr. Nolan stated, "designing an airplane per se is not enough. The basic dimensions of the F-5 structure and envelope are such that permit almost unlimited modification and purpose. Fighter, trainer, single place, two place, photo recon, sod field. The airplane A and B versions are only the beginning. The design has at least a 10-year future before newer technologies give the free world something more advanced."

In announcing the names of Norair people who will head the project, Mr. Nolan emphasized that all those who have been assigned were picked because their abilities and past experience fit them for this vital responsibility.

The F-5 Project office, the Norair team with whom the Air Force will work closest, stems from the department of W. E. Woolwine, manager, T-38/F-5 Program.

The F-5A Project office is under the jurisdiction of Sal Xifo, director, F-5A Program. Working with Mr. Xifo is William Cunningham, assistant to F-5A Program director and Stephen Smith, project engineer.

Customer Relations is the responsibility of Bill Frash, director, Aircraft Marketing.

Administration phases come under E. V. Chandlee, chief, Program Administration.

Technical and design support, headed by William Stuart, engineering director, T-38/F-5 Program includes Lowell Yancey, chief, Structures and Mechanical Systems, T-38 and F-5; Frank Lyons, chief, Electronics Systems group; John Flores, chief, Aero and Propulsion; and Lee Begin, chief, Production Application and Integration.

The F-5A Test Program is under the direction of Lew Nelson, director, Test section. Flight test will be conducted by Hugo Pink, chief, Flight Test group. Lab test will come under Jerry Cardoza, supervisor, Laboratory Test Programming. Edwards operation of the F-5 as with the T-38 and the X-21 are the responsibility of Jack Farley, Base administrator.

Manufacturing support is

headed by Jack Sherriff, chief, Manufacturing Program Planning and Change Control. Manned Aircraft; other key men are Al Carr, superintendent, Production Assembly; Bert Pryor, general supervisor, Materiel Coordination; James Hopper, tool project engineer. From Advanced Production—R. H. Thornhill, superintendent and S. E. Turner, Manufacturing Project coordinator, F-5A and B. Planning is L. I. Holmes, program planner.

Contracts are being handled by John Beatty, jr., chief, Prime Contracts.

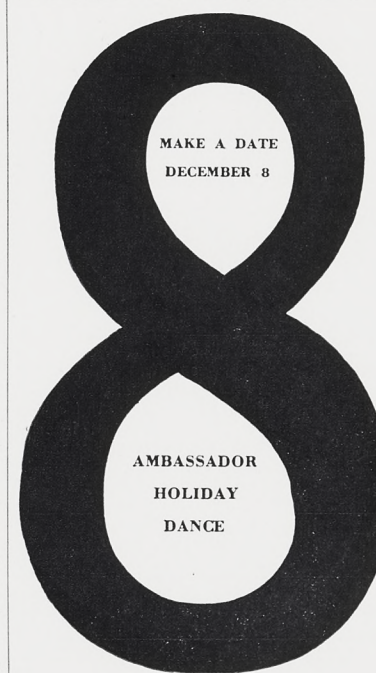
Product Support which includes all phases of field service, logistics, supply, technical training and representatives, and publications, is the responsibility of Frank Mathes, manager, Product Support.

Key men in Quality Control on the F-5 program are John Martin, chief, Aircraft and Base Inspection, Edwards, and Elmer Moore, general supervisor, Aircraft and Advanced Production, Hawthorne.

## THANKSGIVING 4-DAY HOLIDAY

A four-day holiday is coming up. One of Northrop's two floating holidays will be applied Friday, the day after Thanksgiving which stretches the weekend to four full days, Thursday, Friday, Saturday, and Sunday.

The remaining floating holiday will be used on Monday the day before Christmas.







## RIDES WANTED

7 a.m. — 3:45 p.m.

WALNUT & HILLCREST, El Segundo.  
Ruth Sims, ext. 2170, EA 2-2681. 2

7:30 a.m. — 4:15 p.m.

LONG OR WEST BLVD. & 65TH ST.,  
Inglewood. Marilyn Marshall, ext. 1965.  
1945. OR 8-1339. 3LENNOX & HAWTHORNE BLVD., Lennox.  
Carol Taylor, ext. 2603, 2604, OR  
2-1881. 3BOLSA CHICO & EDWARDS, Huntington  
Beach. Bob Heiss, ext. 1951, 897-  
7166. 3WARDLOW & STUDEBAKER RD., Lona  
Beach. W. F. Funke, ext. 1555, HA  
1-2294. 3

8 a.m. — 4:45 p.m.

TOPANGA CANYON & ROSCOE, Ca-  
noa Park. John Dennis, ext. 4008.  
340-8274. 5REDONDO BEACH BLVD. & YUKON,  
Torrance. Val Johnson, ext. 770. 5HERMOSA AVE. & 16TH ST., Hermosa  
Beach. John P. Sanford, ext. 2151. 5MANHATTAN BEACH BLVD. & ARD-  
MORE, Manhattan Beach. Bob Reed,  
ext. 1352, FR 2-0554. 5

## EARN REFERRAL AWARDS

## RIDES OFFERED

7:30 a.m. — 4:15 p.m.

BOLSA CHICO & EDWARDS, Huntington  
Beach. Bob Heiss, ext. 1951, 897-  
7166. 13WARDLOW & STUDEBAKER RD., Lona  
Beach. W. F. Funke, ext. 1555, HA  
1-2294. 13

8 a.m. — 4:45 p.m.

MANHATTAN BEACH BLVD. & ARD-  
MORE, Manhattan Beach. Bob Reed,  
ext. 1352, FR 2-0554. 15TOPANGA CANYON & ROSCOE, Ca-  
noa Park. John Dennis, ext. 4008.  
340-8274. 15

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

SUPER 88 OLDS, 1959 4-dr. h/top, power steering & brakes, auto. trans., low mileage, orig. owner, \$1875. OR 8-1762. A

CAMPING TRAILER, sleeps 4 adults. 2-burner butane stove, water tank. \$225. FR 2-9433. A

TRIUMPH, 1960, approx. 21,000 mi., r/h plus extras, orig. owner, \$1500. 671-0536. A

GAS STOVE, Magic Chef, \$25. PL 5-7521. A

ARCHERY EQUIPMENT, 2 Lloyd Theron bows, 40-lb. & 45-lb. at 28" pull, 24 aluminum arrows, 12 broadheads, \$100 or will sell separately. DA 5-4961. A

CADILLAC DEVILLE, 1951, 2-dr., stick shift, new tires, rebuilt engine, good paint, r/h, whitewalls, \$400. OS 5-0657. A

CRIB & playpen, \$20. OS 9-3820. A

AUSTIN HEALEY, 1955, new paint, upholstery, r/h, wire wheels, overdrive, 2 tops, mech. excellent, \$1049. FR 7-2160. A

BUICK, 1953, good tires, new battery, good running cond., \$75. DA 7-9950. A

MGA, 1960, r/h. \$1450. FR 9-8322. A

KITTENS, Siamese, male & female, 8-wk-old, purebred, \$10 ea. GL 4-5985. A

TRAILER, 35' Viking, 1-bdrm., clean & furn., set up in trailer park, \$1400. PL 4-6807. A

CRIB, maple, w/spring, \$25; playpen, fold-down type, maple, \$10. DA 4-5804. A

BICYCLES, boy's, 24" lightweight, \$15; 26" 3-sp. lightweight, \$18; heater, elec. portable, w/fan & thermostat, \$10. PL 5-4497. A

HOUSE, split level, coastline view, Manhattan Beach, 2500 sq. ft., 3-bdrm., 2 1/2 baths, walnut paneled family room & separate dining room, dream kitchen, 2 pantries, 20x25 living room, interior garden, 2 fireplaces, beam ceilings, carpets & drapes, built-in cabinets, desk bar, bookshelves, can convert into 4-5 bdrm., \$59,500. FR 2-5867. A

HOBBY HORSE, \$8.50; play pen w/pad, plastic rail caps, \$11.50; slide, 6', steel, \$7.50. 754-9637. A

FURS, silver fox, 1 pr., extra large, evenly matched, cost \$190, \$50. OR 7-1372. A

RANGE, Autolec, aas, about 1956, good condition, \$35. FR 7-4437. A

## FOR SALE

BENCH SAW, 8", w/tilting arbor, 1/2 hp motor, roll away bench, starting panel, table extensions, \$50. ST 9-2594. A

STUDEBAKER, pickup, 1960, 8' bed, \$850. 324-5961. A

GT ALFA ROMEO, one of 3 built for '56 touring show, 2-liter, red coupe w/red seats & rugs, 5 spds. forward, 5000 miles, Englebreck tires, \$2150. DA 9-0314. A

HOUSE, 2300 sq. ft., custom 3-bdrm. & den, 2 1/2 baths, extra large kitchen, dining area, covered patio, fenced yard, in big tree area of Palos Verdes Estates, \$37,900. FR 7-4146. A

FORD GALAXIE, 1961, convertible, power steering & brakes, fitted tonneau cover, black & white interior, w/w tires, 15,000 miles, \$2100. NE 1-8971 after 6 p.m. A

DINING ROOM TABLE & 5 CHAIRS, walnut, \$20. OS 5-8413. A

MOTORCYCLE, 1959 Triumph Thunder-bird, 650-cc Twin, \$650. DA 4-1793. A

PICKUP, 1949 KBI International 1/2 ton, 4-sp. transmission, \$275. OS 6-3792. A

DAVENPORT & CHAIR, green, will deliver locally, \$15 for both. OS 6-1018. A

FORD, 1955, 4-dr., r/h, two-tone, \$235. DA 7-9955 after 4:30 p.m. A

STOVE, Gaffers & Sattler, full-size, 4-burner, \$35; refrigerator, Westinghouse, 10 cu. ft., auto. defrost, \$75; dining room set, 5 chairs, buffet, hutch blonde, \$80; upholstered chairs, 3, \$15 ea. OR 2-0956. A

PICKUP, Ford V-8, 1957, lona bed, r/h, 6-ply rear overloads, 4-sp. trans., custom cab, \$800; bicycle, girl's, 3-sp., 1-yr-old, \$15; engine, gasoline, 4-hp, \$20. WA 5-3166. A

WASHER, Frigidaire auto., cost \$298, \$150; mower, Olympic Rotary #22, cost \$98, \$45; bba. table & 2 benches, redwood finish, \$15; rug & pad, 9'x12', cost \$179, \$25. 943-2838. A

CHEST FREEZER, 1958 Coldspot, 22.5 cu. ft., \$75; refrigerator, Coldspot, 10.5 cu. ft., \$25. CR 6-3534. A

CANNING JARS, w/lids, \$1.25 a doz.; sink for service porch, 24"x24", cast iron, \$10. VE 7-4237. A

TACHOMETER, Dixco, 8500 rpm, 12-volt, w/case, \$25. OR 7-8775. A

STOVE, O'Keefe & Merritt, chromed deluxe; refrigerator, 11 cu. ft., 2-dr., 80-lb. deep freeze Servel; comb. washer-dryer, RCA Whirlpool; 3 coffee tables; occasional chair; lamp table, 2-tier, round; corner table 2-tier; dressing table w/mirror; overstuffed bed divan; dinette set, 6 chairs, chrome, \$375 or will sell individually. DA 9-8960. A

JEEP, 1950, model CJ3A, 4-wheel drive w/disconnect hubs, \$800. FR 1-1667. A

TV, 1958 Packard-Bell, blonde low boy console, 21" screen, \$50. FR 5-9640. A

EXT. MUFFLER, dual, for 1955 or 1956 Mercury, \$5. 759-6091. A

FURNITURE, 5 rooms complete, bdrm. set, 5-pc., \$65; table, lae., 6 chairs, \$50; refrigerator, \$65; range, aas, \$45; washer, auto., \$65; living room set, \$95; TV, 21", \$30; bed, \$5; mattresses, 2 twin, \$5 ea.; radio, \$5; rug 9x12, \$6; curtains, \$10; other household articles. Box 2201. A

CHEVROLET, 1950, 2-dr. sedan, good 2nd car, \$100. 834-2845 after 5 p.m. A

FORD, 1962 Galaxie, V-8, 4-dr. town sedan, power steering & brakes, Fordomatic, r/h, w/w tires, white finish, under 8500 miles, \$2350. Box 2202. A

VIOLIN, junior size, \$35; trumpet, \$35; piano, upright, \$100; pool table, 3'8"x6'10", complete w/cue sticks & balls, \$50. OS 5-2040. A

BOAT, good for water skiing, fishing skin divan, 16' Fleetwood Ambassador hull, fiberglass over wood, extra wide beam, remote control, Mercury 35-hp motor, elec. starting w/generator, custom-made tiltable trailer, 4 cushion-type life preservers, ski rope, running lights, \$695. OW 7-3328 after 6 p.m. or weekends. A

MATERNITY SMOCKS, 2 for \$5; crib & 54" mattress, \$20. TE 1-6567. A

GAS RANGE, good, clean, \$25; camera, Kodak, Pony 135 w/carrying case, \$17.50; luncheon set w/extra pieces, genuine Mexican blue glass, \$10; ventriloquist's dummy, large, very old, \$7.50. AX 4-7348. A

PRINZ NSU, 1960, 2-cyl., 30-40 mpa 4 new tires, new brakes, body in very good condition, seats 4, good trans. car, \$325. OS 6-6705 after 5 p.m. A

TRAILER, partly finished, 6'x8', good for hauling, \$5. OS 9-7615. A

PUPS, Weimeraner, AKC reg., born Sept. 22, 2 blue, 3 silver, \$50 & up. 374-0890. A

FORD, V-8 Country Sedan, 1955, new rinas, new whitewalls, Fordomatic, r/h, excellent condition, \$550. ST 9-9648. A

## WANTED TO BUY

CEMENT MIXER, 378-5348. B

SLEEPING BAGS, lightweight, down & feather filled; rifle, 22 c., semi-automatic, & shotgun, 20-gauge, OS 6-8331

CYCLO MESSAGE PAD, Nicaora, PL 4-1964. B

RANGE & OVEN, built-in, aas, new or used, also kitchen cabinets. DA 6-5558

TRANSPORTATION CAR or Volkswaagen OS 9-6765. B

## EARN UP TO \$200

DRILL PRESS, bench or floor model, 1/2" capacity, FR 4-2915. B

## NRC Unveils New Lapidary Shop



**OPEN HOUSE COMING UP**—The NRC Gem and Mineral Club, Howard Converse, commissioner, invites all Northrop people to Club's lapidary shop open house scheduled for Sunday, November 18 from 1 to 6 p.m. The lap shop is in the Yukon Building, 12600 Yukon Avenue in Hawthorne. Photo above shows Club members at work at the brand new buffing and grinding machines. From left Vernon Boyd, Luella Claypool, and Rosalie Boyd. On table are specimens of agate and chalcedony bookends, cut and polished, ready to grace someone's den. The shop has a 20-inch diamond slab saw, two 10-inch trim saws, a 14-inch slab saw, three complete grinding units and two large laps. Members schedule their use of equipment so that projects do not conflict.

## G &amp; M off to Wiley Well in Agate Search

Immediately after the NRC Gem and Mineral Club open house, the membership will take advantage of the long Thanksgiving weekend to desert trek to Wiley Well. Wiley Well being agate and geode heaven about 250 miles from the Plant, out Blythe way.

Rockhounds and others should take Highway 60 toward Blythe. About 18 miles this side of Blythe watch for Bridge No. 5618. At that point there will be an NRC sign and a sign directing to Wiley Well. Turn right and drive approximately 12 miles—a washboard road—and keep eyes peeled for the NRC sign on the right. The camp will be nearby in a draw.

An extra diversion consists of fishing at Laguna Palo Verde. Return to Highway 60 from the Wiley Well location, right toward Blythe through Ripley to 28th Avenue, right three miles to Ranells Boulevard, left two miles to 32nd Street, right one mile to Palo Verde Boulevard, left through Palo Verde and look for the NRC signs. They will lead the way to the camp, say Gem and Mineral folk.

## FREE (to be given away)

KITTEN, male, has shots. FR 7-2263. D

## RENTALS OFFERED

WORKING GIRL to share nice home w/employed woman, private room, bath & aarage. \$60 mo. FA 0-3440 eveninas. APTS., 1-bdrm., swimming pool, carpets & drapes, built-in elec. kitchens, \$125. \$135. EX 7-3226. E

APT., 1-bdrm., unfurn., large, near new, deluxe, downstairs, near Northrop, shopping, public transportation, disposal, car ports available, sound insulated, \$75 mo. OS 5-9695. E

## EARN UP TO \$200

## LOST

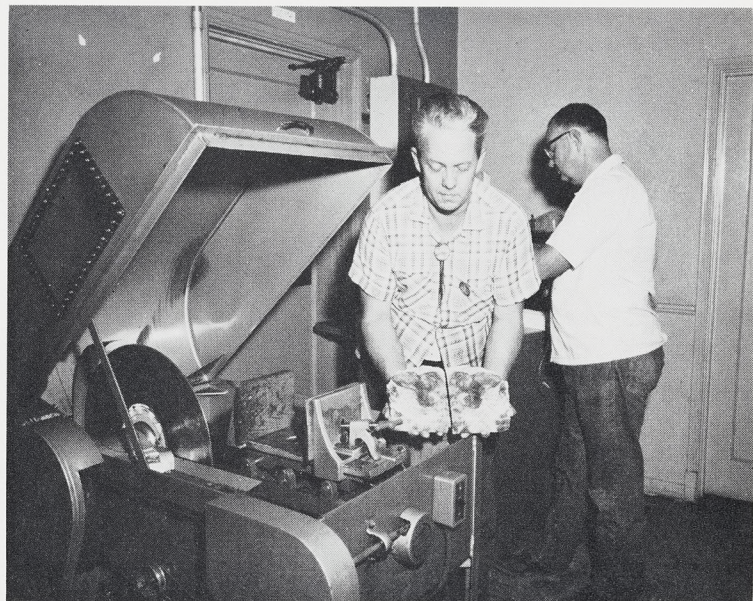
SWEATER, black bulky knit, size 38 to 40, left in ladies' room of Building 3-43. OS 5-6081. J

## PERSONALS

MEMBERSHIPS available in A & E Flying Club based at Hawthorne Airport, Cessna 140, \$4; 170, \$6; 172, \$6.50; Mooney \$8; Bonanza, \$10; dues \$12 month. nominal initiation fee. DA 4-2992 or FR 5-6751. L



**POLISHING**—From left, Aileen Townsend, Bill Greenwood, and Doris Russell. They are shown using lap machines to polish the surfaces of freshly cut minerals. All sorts of projects may be carried out. Bookends, jewelry, ash trays, all sorts of handles for paper knives, pistol grips, ad infinitum. The lap shop, says Howard, is a wonderful place to make unusual Christmas gifts. Members also point out that the fun is not all here. It really starts when the Club goes to the desert to search for rough specimens.



**DIAMOND SAW WORK**—Lyle Claypool shows what the diamond-toothed saw can do to a piece of cryptocrystal-line quartz. Cut properly and polished, the beautiful patterns emerge. Rex Russell in background is slabbing a mineral on another piece of equipment. A feature of the open house will be a display of several cases of rocks and minerals that have been fashioned by Club members with their own ingenuity and the help of this fine machinery. "We are anticipating a crowd at the open house," says Howard. "Come early."

**Buy Savings Bonds**





# Northrop Norair News

Issued biweekly by Norair Division of Northrop Corporation • Wednesday, November 21, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, EL PASO

## LFC IDEA SETS NEW AWARD RECORD

### College-bound Teenagers to "Explore" Careers at Norair

What subject should I major in in college?

The answer to this vital question so often asked by teenage boys of America is to get the spotlight of community effort at Norair during the year of 1963, and into the foreseeable future with Division sponsorship of an Exploring post rapidly taking shape.

Competent advisors are needed immediately to implement this fresh new look in programs for the youth of America. A call has been issued by George Schnug, assistant to the manager, Manufacturing, and Charles Eyres, assistant to the vice-president, Technical, for Division experts and specialists to attend a kickoff meeting at 4:30 p.m. next Tues-

day, November 27, in the fourth floor conference room, Engineering and Science Center.

Both Mr. Schnug and Mr. Eyres are members of the newly

#### CALL RACHEL

If you plan to attend the briefing meeting for the Norair Aerospace Explorer post, call Rachel McClure, extension 1385, 1359.

The meeting will be next Tuesday, November 27, 4:30 p.m., fourth floor conference room, Engineering and Science Center.

See story for details.

formed Norair Scouting Policy committee.

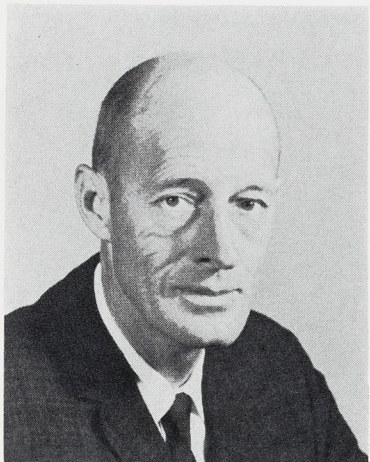
The meeting will last for approximately an hour and a half with Scout Exploring officials giving briefings on how such a post is organized and run, the nature of programs, and presentation methods that have proved successful.

Name of the club will be Norair Aerospace Explorer post.

Its purpose will be to help college-bound boys from 14 to 18 years of age see firsthand and for themselves the inner workings of the Division from all points of view; management, scientific, research, technical, manufacturing, quality control, and finance.

Exposed to the intricacies of industry during the year-long

(Continued on Page 3)



**JACK YOUNG, director, LFC Quality Control.**

... Scouting Policy Committee member.

### RUTZKE-WEINS SUGGESTION SAVES 23,000 HOURS

Christmas certainly arrives at the right time of year for Northrop model builders H. E. Rutzke, nights, and Larry Weins, both Organization 5515, Advanced Production.

**The men were awarded \$2000, \$1000 each, a Suggestion Award record at Norair, for their idea to use Sta-foam for mockup work.**

The suggestion by Mr. Rutzke and Mr. Weins was turned in over a year ago, when Division officials solicited better ways to mockup ducting on Laminar Flow Control. The usual method, to make mockups of wood, would have created a serious overrun

in contract costs on the development of the X-21 research airplanes.

#### ACADEMIC PAY

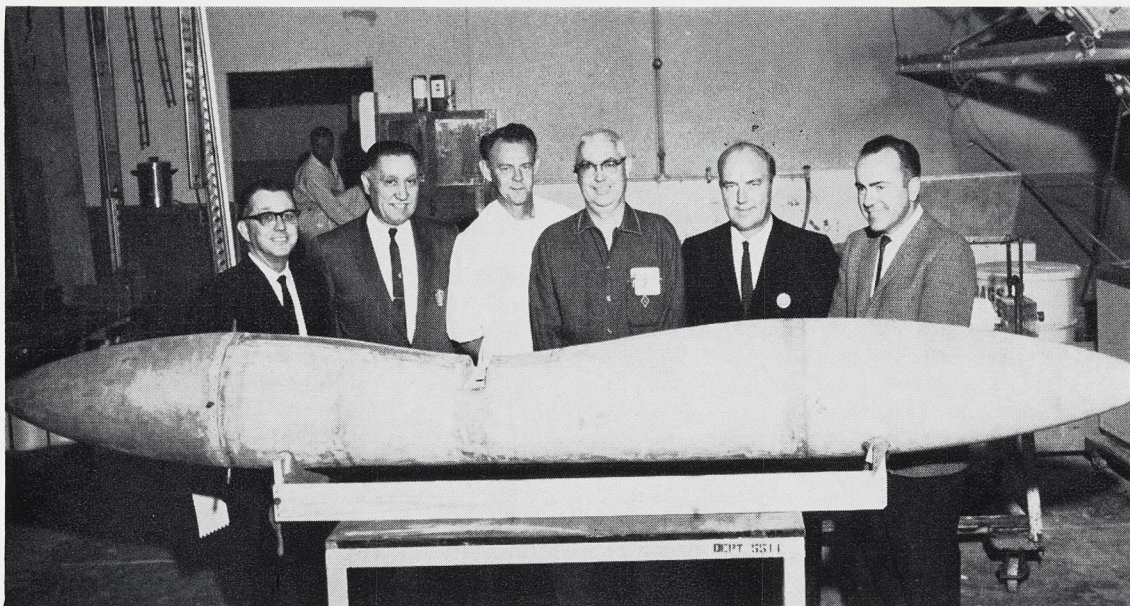
Now is the time to make application for Norair graduate study awards for the spring semester. Awards consist of paid academic time off for classes requiring attendance during normal working hours.

Details are contained in SPP 2-7.5. Additional information may be obtained by calling the Education and Training group, extension 2436, R. W. Geer.

The record payoff idea proved sound, and went into test for a year. Technical soon found that Sta-foam covered with "glass" was good material for use in airborne test parts such as dummy tip tanks and tail cones. The easily-worked lightweight material has now found many other uses, including that of patterns for plaster patterns. Northrop Space Laboratories is now using it in certain applications.

**During the past year, computations show that the Rutzke-Weins idea has made possible a savings of over 23,000 hours in critical aerospace jobs.**

(Continued on Page 2)



**HIGHEST PAID AT NORAIR**—Norair model builders, center, Harold Rutzke (nights) and Larry Weins, were awarded \$2000 for their suggestion to use Sta-foam in mockup and airborne model work. From left, offering congratulations are Rex Thornhill, superintendent, Advanced Production and Weld group; John Breneman, director, Operations (nights); O. P. Omley, director, Production Operations; and Ed Mensak, foreman, Advanced Production Wood shop. Idea under evaluation for a year, has saved over 23,000 hours on Division contracts. (See story.)

### Norair Ladies Will Study Company Office Procedures

An orientation course for some 250 secretaries and clerks at Northrop Norair will start November 26, it has been announced by Bob Rolfe, chief, Education and Training.

The course will cover Norair office procedures and will provide guides in areas such as office etiquette, self-improvement, telephone techniques, reproduction services, security procedures, communication and understanding. The total course will consist of 10 hours of instruction, two hours a day for five days for each group.

Outside speakers have been selected to give portions of the presentation.

Talking on the subject of office etiquette and self-improvement is Mrs. Yvonne Black, former John Robert Powers instructor who holds teaching credentials from the State Board of Education, and was a secretary for the

Federal Bureau of Investigation. She has taught at Pasadena City College under their extended day program in personal improvement for women. She has also taught courses in personal grooming, personality and speech development under the California Adult Education program.

While working as a legal secretary, Mrs. Black was selected from over 19,000 contestants as

#### REMINDER

All members of the Institute of Aerospace Sciences and the American Rocket Society please take note.

Be sure to vote on the merger.

the winner of Glamour Magazine's "Ten Girls with Taste" survey, and as the winner, appeared on the cover of Glamour, received a complete wardrobe

(Continued on Page 2)



**NORAIR SCOUTING POLICY COMMITTEE**—First session was devoted to formulating sponsorship of the Norair Aerospace Explorer post. T. L. McCarthy, chairman and Norair Administration manager, is seated. From left, standing, Walter Fellers, director, Long Range Planning; Charles Bradford, editor, Northrop Norair News; Charles Boyle, chief, Personnel Activities; Charles Eyres, assistant to the vice-president, Technical; George Schnug, assistant to the manager, Manufacturing; Byron Bonnett, director, Management Research and Services; and John B. Clark, director, Industrial Relations and Security. Norair Aerospace Explorer post will be for boys 14 to 18 who seek guidance in choosing careers. Division experts and specialists are needed to form post advisors committee. Committee member Jack Young, director, LFC Quality Control, see photo above.



## To the Ladies

It's a man's world—or is it? Well, not entirely here at Norair.

The phone rang one day last week. The voice, a male, offered a suggestion—"Why not write a story about our women supervisors, the Norair girls who have

By John B. Clark

successfully invaded what has been considered man's domain for so these many years?" "Glad to oblige," the voice was told, and glad we are to pay well-deserved recognition to a group of Norair first ladies who are daily accomplishing their assignments in a most commendable manner.

Women supervisors? Why not? Some of us remember the dark ages when women rarely, if ever, enjoyed supervisory status—employees, yes — bosses, no! But times have changed. The gals have carved themselves an enviable place in management circles throughout industry—and industry has prospered. Yes, management has gone co-ed and we can proudly prove it.

Men of Norair, let us look to our laurels as we doff the hat to those charming stalwarts, Louise Hobson, Mary Reed, Dona Page, Mary Delaney, Ellen Melugin, and Lillian Kramer.

Name the man who could supervise Norair's good telephone service as well as our Louise. Next time you are passing the telephone room look through the glass window. Observe the efficiency of operation for which Mrs. Hobson is responsible; friendly service that is often the subject of praise from both within and without the plant. Go ahead; name the mere man who could do better.

And Mary Reed, supervisor and "housemother" (they all love Mary) to the finest group of young ladies and gentlemen who ever carried the mails. Understanding, considerate, capable, Mary continues to head an indispensable service team with a brand of know-how unmatched in this Division. "Neither snow, nor rain . . . nor gloom of night" could ever impair Mrs. Reed's

loyalty and dedicated service.

And how about Dona Page? We in Industrial Relations (it is no secret) consider Dona as one of our own particular fringe benefits. A woman supervising other women! Never works, you say? Drop around and let Dona's girls change that old phobia. Here, indeed, is a mutual admiration society, for Miss Page is a true leader — a tireless worker, herself, who inspires the best in every individual in her "sorority" — and many new techniques which have proved immensely effective in cost savings and an overall efficient operation in the Personnel group can be credited to Dona Page.

Mary Delaney is the right-hand "man" to the treasurer of the Northrop Credit Union — supervising the staff and doing a bang up job of it. Our lady banker sees to it that her girls post those welcome dividends in the right accounts and assists the treasurer in giving typical Norair "service with a smile" when we call to finance the new family chariot or need a few bucks to tide us over those inevitable days when taxes fall due. Good girl to know, Mrs. Delaney.

As head nurse among our "ladies in white," we find Mrs. Melugin. From Grand Island, Nebraska came Ellen, bringing to our Medical group executive competence, with that added requisite, the spirit of Florence Nightingale—enhancing the value of this most important function.

Another taking her place in our supervisory ranks is Lillian Kramer. Following 10 years of loyal and conscientious service, Lillian has become our very newest supervisor. "She just could not miss," her male associates in the Product Support department tell us. Here, Mrs. Kramer has been recently promoted to supervisor of Central Files. No doubt about it, she, too, will emulate the fine example of her predecessors in performing her responsibilities as a talented gentlewoman should. Enter madame with our best wishes into your new world of greater influence.

Yes, we are proud of these women and proud of being a part of a Company that recognizes managerial capability in either sex and does something about it.

## Record Suggestion

(Continued from Page 1)

Sta-foam can be cut and shaped faster than laminated hardwood. It can be worked with conventional model builders' tools, such as bandsaws, razor blades, Exacto knives, sanders. It is light. One man can carry a model of Sta-foam which, if made of wood or metal would require a hoist.

In addition, because of its lightness, mockup supporting structures can be made lighter and at less cost.

### EARN REFERRAL AWARDS

The material comes in many convenient sizes.

Norair officials all agree that the record Suggestion is a well-deserved tribute to two fine workmen.

Stated Bob Lloyd, vice-president and assistant general manager, Operations and a member of the Norair Management Award committee. "Mr. Rutzke and Mr. Weins by their timely sugges-

tion have contributed greatly to the progress of Norair Division. They responded immediately when a call was issued for a better way to do a difficult job. Their idea has helped maintain schedules and cost commitments to the Air Force. The savings realized will be a benefit to the American taxpayer. Further, they have scored a significant advance in the aerospace arts. In behalf of Norair management, I congratulate them."

**BUY  
FREEDOM  
BONDS**

## Classes in Norair Office Procedures

(Continued from Page 1)

and a trip to Europe. She has also appeared on television, both in New York and in Hollywood.

Presenting the summary on "How to be a Super Secretary" is Dr. Jack Martin, professor at El Camino College for the past 12 years, where he teaches business psychology, oral business communication, advanced typewriting, and salesmanship. Dr. Martin also teaches at the University of Southern California in the business education field. He is the founder of the California Future Business Leaders of America club for business students in

high schools, junior colleges, colleges, and universities. Last summer he conducted the business education workshop sponsored by the Hawaii State Department, while at the same time teaching at the University of Hawaii. Dr.



YVONNE BLACK

... Glamour Magazine's ten girls with taste.

Martin received his bachelor and master degrees from Ohio State University, and his doctorate from the University of Southern California.

Mrs. Bee Finne, lecturer-dem-

onstrator from the Pacific Telephone Company, will offer suggested steps and professional tips toward improved efficiency and economy through correct telephone usage. She will demonstrate and discuss telephone use, voice control, and telephone phrases and manners.

Mrs. Finne started her telephone career as an operator in 1944. Since then she has held many positions with the Telephone Company including employment office supervisor, district office supervisor, business office supervisor, and traffic secretary. She was appointed public relations representative in 1958.

Verne Reynolds, Nortronics training specialist, will assist by presenting the class on communication and understanding. Mr. Reynolds is an accomplished speaker and has had many experiences, both on television and radio, which make him exceptionally well qualified in the communication field.

Completing the program will be Bill Posey from Reproduction Services, Eiven Sunde from Security, and Louise Hobson from Telephone and Telegraph.

## Eyres, Oakes to Officerships in Los Angeles I A S

Charles W. Eyres is the newly elected secretary and William J. Oakes has been named membership committee chairman of the Los Angeles Section, Institute of the Aerospace Sciences.

Mr. Eyres is assistant to the vice-president, Technical at Northrop Norair.

Mr. Oakes is chief of Proposals group at Northrop Space Laboratories.

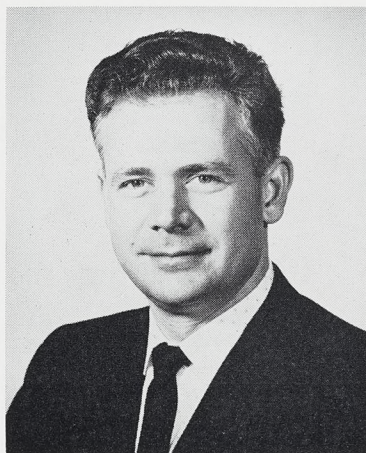
Both men have been active for many years in the 16,000-member IAS.

In 1961 Mr. Eyres was general chairman of the first annual joint meeting of the IAS and the American Rocket Society which brought some 3500 of the nation's top aerospace scientists and engineers to Los Angeles. Last September he was a session chairman at a national technical manpower conference in New York, sponsored jointly by the IAS and



CHARLES EYRES

... IAS secretary.



WILLIAM J. OAKES

... IAS membership.

President Kennedy's Office of Emergency Planning.

Mr. Oakes, an associate fellow of the IAS was elected treasurer of the Los Angeles Section in 1960. Since 1955 he has served on various IAS committees, including three years on the Engineering Career Development Committee.



**THE GOLDEN SHOE**—Golden shoes, awarded to Norair workers who have avoided foot injury by wearing safety-toe shoes, were given in a recent double ceremony. John Breneman, director, Night Operations and Ole Omley, director, Production Operations, right, present the precious trophies to J. M. Karaszewski, Engineering Liaison Operations, and to Joseph D'Alesio, Sheet Metal Shop. Photo was taken in Norair Safety Store. Lee Johnson, chief safety engineer reminds that store has complete line and all styles including dress, semi-dress and heavy industrials. Store is in Plant One high bay area.

## SO-SEC RATE TO CLIMB 1963 THROUGH 1968

Beginning in January, Social Security taxes will increase, Northrop personnel are advised by Dave Stadler, chief, Personnel group.

### REFER ENGINEERS

Provided for by law enacted by Congress the rate goes up from 3 1/8 per cent to 3 5/8 per cent for the years 1963-1965.

In 1966 and through 1967 the rate will be 4 1/8 per cent; in 1968 and thereafter the rate will be stabilized at 4 5/8 per cent.

Last year a worker earning \$4800 or better paid a total of \$150. For the next three years this will become \$174; then \$198, and finally \$222.

And wage earners shouldn't forget that in addition to the tax

each worker must pay, his employer must pay an equal amount.

Social Security benefits are equivalent to an estate of \$20, \$30, or \$50 thousand, yet even this, say retirement experts is not enough to keep one "fishing" for the rest of one's days. You will need company retirement benefits, savings, insurance, et cetera to supplement.

## Northrop Norair News

VOL. 20 NO. 23

1001 E. Broadway, Hawthorne, Calif.

A NORTHROP CORPORATION

PUBLICATION

NORAIR DIVISION

Published every other Wednesday

CHARLES BRADFORD, Editor

Permission to publish material with credit to Northrop Norair News will be granted. News office extension—2456. Outside lines—OR 8-9111, OS 5-4611.



## Twenty-Year People Celebrate



**DIAMOND PIN DAY**—Thirty-seven Northrop Norair Division personnel who turned 20 years service, pose proudly with Corporate Vice-president and Norair General Manager Dick Nolan, center. Mr. Nolan presented diamond pins, talked informally and at length on Company progress and projects.

## Nor-Aid Financial Report For Past Year Shows \$51,790 Paid To Needy

Nor-AID financial report for fiscal year ending July 31, 1962 showed a bank balance remaining of \$23,708.01 after granting emergency aid to 181 Northrop families during the 12-month period, it is announced by Mal

Mountain, Nor-AID vice-president and administrator. Amount of Nor-AID grants for the year was \$51,790.53.

Miscellaneous operating expenses for 1961-62 were \$18.55. The report was issued at the

annual meeting of directors and election of the board of directors and officers held last month.

The board of directors consists of Charles Boyle, Richard Carroll, John B. Clark, George Gore, Bob Lloyd, Grant Macdonnell, John Richardson, R. M. Shave, and Paul Wierk.

Officers in addition to Mr. Mountain are George Gore, chairman of the board; Charles Boyle, president; Marie Tully, secretary; George Forbes, treasurer; and Ernie Boren, accountant.

Nor-AID facility committees are located at Hawthorne, Edwards, Palmdale, Nortronics ES&E and Nortronics SS Anaheim. Beginning Bank

Balance .....	\$46,492.94
Receipts .....	\$47,605.27
Disbursements	
All Facilities	
Grants .....	\$51,790.53
Miscellaneous	
Operating	
Expenses ....	18.55
Excess Receipts	
Returned to	
AID .....	\$18,581.12
Total	
Disbursements .....	\$70,390.20
Ending Bank	
Balance .....	\$23,708.01

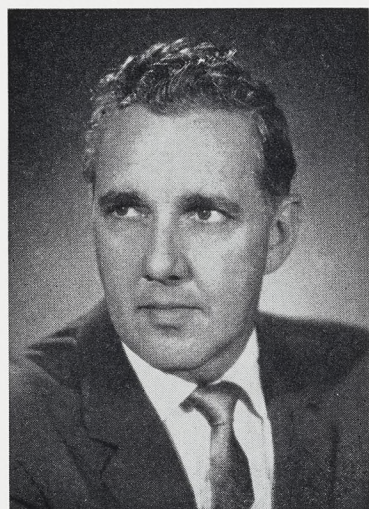
## Church Haenke Heads Western Region Office

Church Haenke, formerly senior representative for Norair Division in the Eastern District office, Washington, D.C., has been appointed Corporate manager for the newly established Western

Regional office, it has been announced by Dr. Wm. F. Ballhaus, Corporate executive vice-president.

Mr. Haenke, a graduate engineer from the University of Southern California, has been with Northrop since 1952. He served with the Air Force in World War II and the Korean War as an electronics officer. He currently holds a commission of lieutenant colonel in the USAF Reserve.

**EARN UP TO \$200**  
Dr. Ballhaus further stated that the Western Regional office will temporarily be located at the Corporate office, 9744 Wilshire Boulevard, Beverly Hills. On December 15, the office will move to 8939 South Sepulveda, Los Angeles 45, California.



**CHURCH HAENKE**  
... Western Region

## Management Club Sponsors J-A Contest

Norair Division Northrop Management Club will sponsor a five-county contest for the best Junior Achievement vice-president, Manufacturing, with the winner, as Southern California representative, being sent all-expenses-paid to the national Junior Achievement conference.

Other awards for the winner will be a perpetual trophy for his or her J-A center, a personal achievement trophy, and guest of honor at Management Club dinner.

**EARN REFERRAL AWARDS**  
Tom Brazil, general foreman, in the Boeing Subcontract Program and Junior Achievement coordinator for the Northrop Management Club announces that contest rules and judging methods are now in preparation.

## Kickoff Trophy



**SCOUT HONOR**—Welko Gasich, Norair vice-president and assistant general manager, Technical, is awarded a special Boy Scouts of America trophy for his part in being host at the recent Exploring kickoff meeting for Centinela District. (See Northrop Norair News pictorial, October 24, 1962). Presenting the honor are at left, John Warnick, District Scout executive and D. L. Roberts, Division of Relationships, National Council, BSA.

## "Exploring" Careers

(Continued from Page 1)

program, the young members of the Norair Explorer post will be able to make a knowledgeable and firm decision in choosing their lifework. They will enter college with a definite goal after having evaluated their own aptitude for the many career choices available.

### \$200 FOR REFERRALS

Stated Dick Nolan, Corporate vice-president and general manager, Norair Division, "Boys who explore their vocations before they start college will be better equipped to pick a field of education. They will have seen what their career looks like in actual operation and they will have talked to the men whose footsteps they intend to follow. Once a boy becomes deeply involved in a line of study and finds he has made a mistake, it is heart-breaking and expensive and sometimes too late to change direction. The boy fails or is faced with a lifetime of being a misfit in his profession.

"I heartily subscribe to Explorer Scouting."

What kind of Norair men are needed for such important community work?

This question is best answered by looking at Orange County where pilot Exploring programs started. The Hughes Semiconductor Division's Science post where avid boys actually build and fire rockets and study the related sciences has been used as an example of what boys really like. It ranks equal in popularity with Medical Exploring posts in that area's St. Joseph Hospital and Palm Harbor General Hospital where teenage career seekers, under controlled conditions, watch doctors at work in surgery. Similarly, with the Orange County Sheriff's Department Law Enforcement post where exciting criminal apprehension drills are staged and law factors rehearsed for Explorer edification.

Mr. Eyres stated, "We need Norair men who are experts or specialists in any one of the aerospace disciplines to form an advisors committee for our Aerospace Explorer post. The boys are interested in seeing the inner workings of the wind tunnel and model computations, space studies, application of mathematics and physics, fluid dynamics, nondestructive testing, including fluoroscopy, and practically all other technical phases we could talk about or show them."

From the manufacturing point of view, Mr. Schnug has asked for advisors versed in research and development, numerical control, Automated Operations Con-

trol, facilities design, assembly line operations, and many others.

Safety, Plant Protection, Information Processing, Business Administration, Business Systems, are also some of the areas where experts or specialists are being sought to take part in guiding the new post.

"As with all scout work," Mr. Schnug states, "helping with the Aerospace post will take some of our off-hours time. The heavy load, of course, will be borne by those who become the chairmen and vice-chairmen. Meetings will be held here at the plant twice a month and this means we need 15 or 20 men each one who can brief the boys on a particular field. If we divide the presentations in this manner two or three meetings a year for each advisor should suffice.

"We need help for this fine program. And many hands make light work. This we all know."

Norair, with Welko Gasich, vice-president and assistant general manager, Technical as host, held the Exploring kickoff meeting for Centinela Valley on October 9. Industry, government, the Air Force, the community and the professions responded immediately. Since then it is estimated that over 20 posts are now forming in this area. Scope of subjects runs the gamut of Valley activity.

### REFER ENGINEERS

The popular new look in Explorer Scouting has been termed as the greatest influence for the good of teenage boys to have been put into action in the past decade.

The Norair Scouting Policy committee which is responsible for implementation of the Explorer program is composed of T. L. McCarthy, chairman and Norair Administration manager; Byron Bonnett, director, Management Research and Services; Mr. Eyres; Mr. Schnug; Walter Fellers, director, Long Range Planning; Charles Bradford, editor, Northrop Norair News; Charles Boyle, chief, Personnel Activities; John B. Clark, director, Industrial Relations and Security; and Jack Young, director, LFC Quality Control.

It is intended that as soon as the Aerospace Explorer post is set and running smoothly other posts will be added until the full quotient of what the Division has to offer is being utilized.

There will be coffee and doughnuts at the meeting, courtesy the cafeteria. Those who plan to attend are asked to call Rachel McClure, extension 1385 or 1359 with name and clock number.





## RIDES WANTED

7 a.m. — 3:45 p.m.

BERYL & PACIFIC COAST HWY, Redondo Beach, Marion Fitzpatrick, FR 4-2398. 2  
LA CIENEGA & CADILLAC, Los Angeles, Leonard Cohen, ext. 2109, VE 9-2860. 2  
BOLSA & GOLDENWEST BLVD., Huntington Beach, Stewart Berkis, ext. 2173, TW 7-4815. 2

7:30 a.m. — 4:15 p.m.

LENNOX & HAWTHORNE BLVD., Lennox, Carol Taylor, ext. 2604, OR 2-1881. 3  
CULVER BLVD. & SAN DIEGO FWY, OR SEPULVEDA BLVD., Culver City, E. D. Peden, ext. 4284, EX 1-7014. 3  
IMPERIAL & BULLIS RD., Lynwood, H. C. Bruce, ext. 1240, SJO, NE 2-8696. 3  
LONG & 65TH ST. OR WEST BLVD. & 65TH ST., Inglewood, Marilyn Marshall, ext. 1965, 1225, OR 8-1339. 3  
HERMOSA AVE & 30TH ST., Hermosa Beach, Pat Greene, ext. 1444. 3

8 a.m. — 4:45 p.m.

E. WHITTIER AVE. & PALM ST., La Habra, David A. Walton, ext. 4161, 691-6389. 5  
ARTESIA & VERMONT BLVD., Gardena, John J. Tourino, 324-1016. 5  
NORMANDIE & 125TH ST., Los Angeles, D. J. Becktel, ext. 2123, 754-2066. 5

## RIDES OFFERED

7 a.m. — 3:45 p.m.

BOLSA & GOLDENWEST BLVD., Huntington Beach, Stewart Berkis, ext. 2173, TW 7-4815. 12

7:30 a.m. — 4:15 p.m.

HERMOSA AVE. & 30TH ST., Hermosa Beach, Pat Greene, ext. 1444. 13

## REFER ENGINEERS

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

STENOGRAPHIC MACHINE, late model, perfect condition, \$50. CR 5-1907 days. WE 3-4906 evenings. A  
CRIB & playpen, \$20. OS 9-3820. A  
RANGE, full-size, Tappan, four burners, oven, broiler & storage space, \$15. TE 3-4226 after 6 p.m. A  
REFRIGERATOR, Hotpoint, \$50. FR 9-6824 after 6 p.m. A  
FORD, Fairlane, V-8, 1955, automatic, 2-dr., \$309. 674-2780. A  
TYPEWRITER, 3-yr-old Royal portable, \$50. DA 3-1853. A  
BICYCLE, Schwinn, \$17. OS 6-1658. A  
TABLE TENNIS OUTFIT, 5'x9' folding table, 2 paddles, net & clamps, \$10; electric train, Lionel, 4-pc. train set, 20' track w/ board & 15-watt transformer, \$15; hi-fi set, Rek-o-Kut turntable, Fairchild arm, amplifier w/ enclosed 12" speaker, \$50; Hollywood bed, twin-size, coil box spring on 6 wood legs & inner spring mattress, \$20. DA 3-5740. A  
CRIB, mattress & spring, Baby Line, in very good condition, \$20. FR 5-2866. A  
VOLKSWAGEN, 1960, black, \$1300. FR 5-4795 between 6 and 9 p.m. A  
CORVAIR MONZA, 1963, silver w/ black interior, r/h, w/w, \$2400. HO 3-0953. A  
FREEZER, chest-type, Duncan Hines Domestic #500, basket, built-in lock, sealed unit, dri-wall construction, adjustable cold control, warning light, automatic interior floodlight, \$150; bed, 2 book shelves, headboard, footboard, side rails for box springs & mattress, \$25. 379-9390. A  
REFRIGERATOR, Frigidaire, 11', center freezer, \$45. FA 8-0450. A  
TWIN BEDS, mattress & box springs, plus frames, \$40. DA 7-8900. A  
POODLE, black miniature male, 6-wk-old, AKC reg., \$100. 754-8014. A  
STOVE, apartment-size, 4 burners & oven, \$25. TW 7-4851. A  
MOVIE CAMERA, De Jur, 8-mm, w/ standard & telephoto lens, lens filters & leather case, \$55; light bar & 3 bulbs, Mayfair, 4-light, \$10; pressure cooker, Presto, \$6. DA 4-7254. A  
SEWING MACHINE, Deluxe Kenmore in walnut cabinet, \$50; bookshelf speaker system, 25-watt amplifier, pre-amp, FM tuner, \$60. FR 9-5690. A  
ADAPTER, FM tuner, Multiplex, AM tuner, Eico equipment, \$35 ea. or all three for \$90. 378-5348. A  
OUTBOARD MOTOR, 5 hp, Hiawatha, good condition, \$50. HO 4-4649. A

## FOR SALE

TRAILER, 2-wheel, 4'x7' high slot box, w/ lights & license, \$65. OS 6-4388 after 4 p.m. A  
MELMAC DISHES, Boonton Ware, service for 8, \$20; lawnmower, \$10. DA 6-5471. A  
TRAILER, 2-wheel, hauling-type, 7'x8' box over wheels, w/ springs, 3' sides, \$75. FR 6-6715. A  
FORD, coupe, 1950, good tires, radio, dependable transportation, \$90; gas range, Roper, 5-mo. use \$90. 326-9106. A  
TABLE LAMPS, 2, \$5; Boston maple rocker, \$15; Chippendale sofa, \$50; knick-knack shelves, \$5 & \$10; drum table, mahogany, \$25; flexie, child's, \$5. OR 8-2728. A  
BICYCLE, 20", girl's, Schwinn, \$25. OS 9-6765. A  
CHOICE LOTS ocean view section, Green Hills Memorial Park, good investment, \$450 ea.; refrigerator, 11.6', Kelvinator, \$75. TO 7-0593 after 5 p.m. A  
GUITAR, elec., w/ amplifier, Hawaiian bars, \$70. OS 6-1085. A  
OLDSMOBILE 88, 1953, new recap tires, new seat covers, \$265; desk, mahogany 7 drawers, \$30. DA 6-0895. A  
TV TRAY & CHAIR, child's, metal, \$2.50; shampoo tray, large, heavy cast iron, porcelain-coated, pastel green, complete w/ chrome plumbing fittings & spray, \$25; TV, Admiral, table model, 17" picture tube, \$50. OS 6-9989. A  
GAS RANGE, 40", Roper, \$65. 371-9673. A  
SURFBOARD, 9'4", Velzy-Jacobs, \$85. 378-5924. A  
VOLKSWAGEN, 1958, 31,000 miles, r/h, w/w, safety belts, orig. owner, \$1150. DA 4-4417. A  
TABLE LAMPS, 2, black & gold, modern, \$15. OS 6-7172. A  
DINETTE SET, chrome, w/ 4 chairs, gray & white, plastic seats & backs, \$25; breakfast nook, custom-built, yellow formica, floating table top, brown seats, \$60. PL 5-7255. A  
DISHWASHER, Youngstown, 5-yr-old model, never used or connected, large capacity, top loading, \$60. TE 1-1940 after 6 p.m. A  
STOVE, gas, Magic Chef, \$25; spring horse, Cal's Colt, \$5; baby stroller, \$2. PL 5-7521. A  
FIAT, Multipla, 1958, \$235; tires, 2, 600-16 & Chevrolet wheels, 6-hole, \$9 ea. OS 5-2159. A  
PLYMOUTH, 1954, 2-dr, 6-cyl., auto, trans. r/h, \$300. OR 7-0540. A  
PONTIAC, Bonneville Vista, 1960 4-dr, h/top, V-8, power steering & brakes, auto, trans., tinted gl., oversize w/w 14x850, deluxe r/h, 20,000 miles, orig. owner, paid \$4500. \$2200. DU 4-4017. A  
ULTRA-VIOLET, mineral light, model NH \$10. OX 9-6181. A  
CAMP TRAILER 1-wheel, Heilite, w/ pull out kitchen, Coleman stove, spare wheel & tire, \$345; Chevrolet, 1951, 2-dr., \$50. 833-8286. A  
EARN UP TO \$200  
STUDEBAKER, coupe, V-8, 1955, auto, trans. good tires, \$300. FR 4-2915. A  
SOFA BED, Naquaahyde, \$100; reclining chair, \$65; living room set, \$175; end tables, 2, maple \$45. OR 7-5080. A  
CABIN CRUISER, 16' sleeps 2, extra wide, 230 hp Mercury motor, \$895; bicycles, 2, 20' & 24', \$10 ea.; coffee table & end tables, blonde, \$10; bedroom set, lime oak, \$50. DA 4-6203. A  
MATTRESS & box spring, Spring Air Health Center, \$50; massage, Moxley \$150; DOL vibrator, \$8; shaver, Remington RoloMatic, \$7; desk, 4-dr. knee-hole-type, \$10; gas range, O'Keefe & Merritt, \$25; 3 rocking chairs, \$3 & \$5; princess dresser, large mirror, \$5; 4 dining chairs, 2 ea.; other misc. items, 834-2845. A  
TRIUMPH TR-3, 1960, 15,000 miles, \$1500. 323-6380. A  
STATION WAGON, 1961 Rambler Classic, 4-dr., custom, factory aircond, power steering, radio, trailer hitch green & white, \$2300. OR 1-8286 WH 8-4346. A  
SKI-UTILITY BOAT, 12' Evinrude, 35 hp, custom-made trailer, \$395. OS 6-7854. A  
JUKE BOX & records, commercial-type 78 rpm, \$20. DA 4-8663. A  
ROCHESTERS, 3, 2 barrel & alum, manifold, air cleaner, fuel line, fuel pump linkage, will fit 265-283 or 327 Chevrolet, \$75; ladies' ring, 2 cultured pearls 2 diamonds, \$35; accordion, Universal 120-bass 3-switch, \$100. OR 4-1847. A  
FORD, V-8, 1951, 4-dr., good engine & tires, new seat covers, generator, regulator last year, r/h, \$150. OR 2-0956. A  
MOTORCYCLE, lightweight Italian, 3-sp. transmission, driven 250 miles \$125. 379-9408. A  
REFER ENGINEERS  
CRIB, Babyline deluxe, 6-yr-old, maple w/ 54" mattress, playpen, Babyline auto-fold, maple, \$35 or will sell separately, 371-9697. A  
FORD, Fairlane 500, 1957, convertible r/h, Fordomatic, new generator & tune-up, excellent tires, \$700. 679-6205. A  
BICYCLE, Puch-Berameister, 10-sp., \$50 DA 9-5285. A  
SKI PANTS, 1-pr., women's, black, size 11, made in France, designed by Ernst Enael, cost \$40. \$25. CR 3-2194. A  
COFFEE TABLE, end table, lamp, floor lamp, \$20. 371-8977. A  
CHEVROLET, Impala convertible, 1960 white w/ blue interior, power steering r/h, w/w, \$1800. TE 3-9455. A

## NRC YULETIDE EVENTS

The Northrop Recreation Club in the traditional spirit of the upcoming Christmas season has planned a full month of holiday events for December. All facilities and many NRC clubs will stage a variety of parties, dances, and programs, it is announced by NRC President Fred Armstrong.

The Yule season parade leads off with the Ambassador Hotel Holiday Dance set for December 8.

Festivities will begin at 8 p.m. with the social hour. From 9 on the entertainment theme will reign with different orchestras featured in each ballroom.

Tickets, priced at a nominal \$1.55 and which may be purchased at all Personnel Activities locations and from NRC affiliates also will qualify holders for a chance at the unique and valuable "surprise door prize".

December 14, Palmdale and Edwards folk will join hands for

## Eagle's Hall Dance Classes Underway

A new series of dance classes started Thursday, November 15 at the Eagle's Hall, it is announced by Wayne Lee, Norair commissioner.

There are two classes, the fox trot and the samba from 7 to 8:30 p.m. and then the mamba and the waltz from 8:30 to 10:30 p.m.

## USE REFERRAL CARDS

The five lessons will cost \$5 a person.

First registration night was November 15. The next will be held November 29. There will be no class on Thanksgiving, November 22.

Bill Martin will be the instructor.

Eagle's Hall is at the corner of Hawthorne and Rosecrans.

## WANTED TO BUY

HUNTING RIFLE, 30-30 or 30-06 & 20-gauge shotguns. OS 6-8331. B

## RENTALS OFFERED

APT., furn., bachelor, utilities paid, privacy, near LaBrea & Slauson, \$70 mo. 295-9997. E  
HOUSE, 1-bdrm., furn., Hermosa Beach near Sepulveda, water paid, \$85 mo. FR 9-4517 after 6 p.m. E  
HOUSE, 8 min. from Northrop, 2-bdrm., fenced yard, garbage disposal, a garage, carport, trees, available in 2 weeks. \$125 mo. GL 4-5993. E  
HOUSE, 2-bdrm., in Inglewood, available December 1. \$125 mo. OR 7-2934. E  
HOUSE, 2-bdrm., w/ large fenced yard & garage, hardwood floors, disposal, tiled stall shower, near plant, \$90 mo. OS 6-1574. E

## RENTALS WANTED

GARAGE OR SHOP for storage purposes, Lawndale, Hawthorne or beach area. FR 4-5979. F

## NORAIR NEEDS ENGINEERS

## FOUND

EARRING, 1 small 10 kt. gold, w/ 2 small pearls, Norair Lost & Found, ext. 1972. K

## PERSONALS

MEMBERSHIPS available in A & E Flying Club based at Hawthorne Airport, Cessna 140, \$4; 170, \$6; 172, \$6.50; Mooney \$8; Bonanza, \$10, dues \$12 month, nominal initiation fee. DA 4-2992 or FR 5-6751. Prospective members invited to meeting Wed., Nov. 28, 7:30 p.m. Product Display Bldg. L  
WOULD LIKE to contact persons interested in collecting aircraft 3-views scale drawings, U.S. & foreign of all eras. OR 0-7624. L

their annual Christmas dance which will be staged at the Clubhouse on Q Street in Palmdale.

The next evening, a Saturday, December 15, Product Support and Graphic Services' annual Christmas dance will be held at the Inglewood Elks Lodge, 317 South La Brea.

At the same time, December 15, the NRC Gem and Mineral Club will hold their party at the NRC Clubhouse on Cerise.

Sunday, December 16, the NRC will go all-out as usual in their big annual Children's Christmas party to be held in the Product Display Building. Not to be outdone by last year's headline affair, "Rudolph the Red Nosed Helicopter" will again land Santa Claus on the lawn in front of the Administration building. There Santa will greet the hundreds of Northrop tots eagerly awaiting his awesome entry on the scene.

## REFER ENGINEERS

The party will be for the hours 12 noon through 4 p.m.

In deference to the long line that must be formed in order to have a personal chat with Santa Claus on stocking materials, the NRC is furnishing benches on which families can take an occasional rest. There will also be touring refreshment wagons, clowns to entertain, et cetera, et cetera, et cetera.

Edwards and Palmdale will also hold their annual Children's Christmas party on December 16—at the Clubhouse on Q Street in Palmdale.

A few days later, December 20 and 21, Thursday and Friday, and just prior to our departure on the yearend holiday, the Northrop Adopted Family program will take place. On Thursday, the organizations will forward their Christmas packages and sacks of goodies to the Product Display Building where they will make a mountainous display of charity and good will for the needy. The next day, Friday, the various "adopted

families" will receive their gifts and Christmas will be a full and joyful event for many many worthy families.

On December 22, Saturday evening, the annual Maintenance dance, impresario Whitey Gillibrand, superintendent, Facilities Design and Construction, will be staged at the NRC Clubhouse on Cerise.

For a few days—up until December 27—the official social NRC scene will be moderately quiet. Then for two days, December 27 and 28, the NRC Christmas golf tournament will occupy the spotlight. It will be played at the Mesa Verde Country Club in Costa Mesa and at the Los Coyotes Country Club in Buena Park.

The season is concluded by the ninth annual Northrop Corporation NRC Christmas bowling tournament at Jola Bowl, 257 North La Brea in Inglewood. (See story).

For additional particulars on any of the foregoing events, Norair personnel should contact Personnel Activities, extension 2784.

## Big Bowling Tourney Set For Holiday

Entries for the ninth annual Northrop Corporation Christmas bowling tournament will open November 26 and close December 12, it is announced by tournament officials Bill Myerson, president; Earl Saunders, treasurer; and Corinne Davis, secretary.

## NORAIR NEEDS ENGINEERS

The location will be Jola Bowl at Florence in Inglewood on December 29, Saturday and December 30, Sunday.

There will be five big events, men and women singles, mixed doubles, and men and women doubles.

Entry fee is \$2.50 a person for each event.

Squad times are 10 a.m., 12 noon, 2 p.m. and 4 p.m.

There will be NRC trophies, alley awards and prize money for the winners.

## SQUARE DANCE CLASS STARTS FOR BEGINNERS

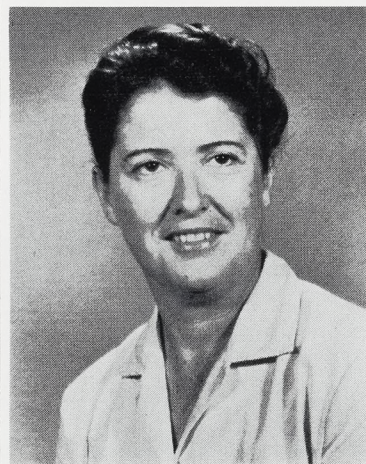
A beginners class is now forming in the NRC Square Dance Club, it is announced by Earl Lambrecht, Norair commissioner.

Class will start Thursday, November 29 at Hill Ranch, 15701 South Crenshaw Boulevard, Time is from 8 to 11 p.m. The class will close December 20.

## EARN REFERRAL AWARDS

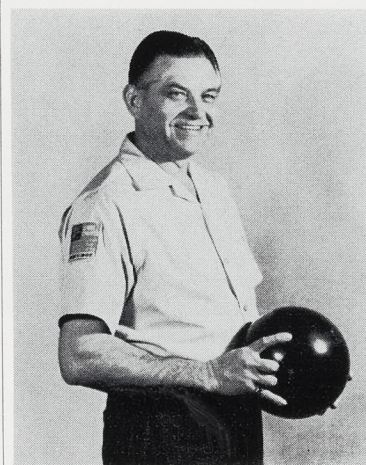
Ralph Hill will be the caller. Earl stresses the fun and challenge that square dancing presents.

People like to do precision team work, he states. There is no recreation available to the individual that sharpens coordination as does square dancing. It's very healthful. Good square dancers, both men and women, find that it keeps them in condition, helps keep weight down, plus the pleasure of an evening out with friends all with the same objective which is to perform those do-se-dos and other exciting routines in a letter-perfect manner.



CORINNE DAVIS

... Secretary



BILL MYERSON

... President





# Northrop Norair News

Issued biweekly by Norair Division of Northrop Corporation • Wednesday, December 5, 1962

HAWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, EL PASO

## Deserved Recognition

Officials of Northrop Corporation and each Division were represented recently at the annual Los Angeles Urban League's Equal Opportunity Day luncheon at the Statler-Hilton.

Those of us present were greatly impressed. These meetings demonstrate the progress being

By John B. Clark

ing made toward our local industry's efforts in the total utilization of all our human resources.

The Urban League, by excellent executive direction, patience, and understanding, has become a beacon for those in minority groups who seek their rightful place in our industrial society.



Race prejudice is evil, whether it is manifested in the home, the community, or in industry. We as employers by active membership in the Urban League have recognized its sincerity and applauded its aims.

The Equal Opportunity Day luncheon this year was of particular interest to us. Two Norair engineers were singled out and given high commendation for their individual contribution to our national defense effort.

### PLACE OF HONOR

Proud as peacocks were we when Thelma Anderson and Theodore Austin Bordeaux took their place of honor before an audience of over 500 leading citizens, including Mayor Yorty, to hear their accomplishments told by the chairman, Doctor Leroy Weekes had this to say about Thelma:

"Mrs. Anderson was employed by Northrop Corporation, Norair Division, on November 14, 1955. She had attended Spellman Col-

lege at Atlanta, Georgia and majored in history and mathematics. Her original assignment was as a technical computer in the Aerodynamics section, assisting in the preparation of data reports for wind tunnel tests. Mrs. Anderson progressed from technical computer to a mathematician and currently is classified as an associate engineer. It is significant to note that all of Mrs. Anderson's performance reviews highlight the general excellence of her work."

And of Austin:

### TALENT REWARD

"Mr. Bordeaux was originally employed by Northrop Corporation, Norair Division, in January 1954 as a form block maker and remained with Northrop until June 1955. During this period of time, while he was working at Northrop full time, he was also attending Los Angeles State College. He graduated from Los Angeles State College with a bachelor's degree in mathematics in June 1956. From the time he left Northrop until August 1959 when he rejoined Northrop, Mr. Bordeaux was employed as a mathematician, aeronautical engineer, and a systems analyst. Mr. Bordeaux, at the time of his rejoining, was assigned as an engineer in the Weapons System Analysis group and has progressed from a position as an engineer through supervision to his present classification as a member of technical management in the Systems Evaluation group. He has demonstrated a capability for leadership in organization. Mr. Bordeaux has been continuing his education despite his increased workload and responsibility at Northrop."

### PLAN FOR PROGRESS

Learning of the public accolade to Thelma and Austin, Welko Gasich, vice-president and assistant general manager, Technical, stated, "Mrs. Anderson and Mr. Bordeaux exemplify the highest standard of performance required in the exacting demands on today's engineers. Both are a credit to Northrop and their profession. The public recognition of their progress by the Los Angeles Urban League is timely. American industry needs the best talents of all our people, regardless of race, color or creed. This is consistent with Northrop's 'Plan for Progress' signed jointly by Vice-president Lyndon B. Johnson and our President Tom Jones."

Congratulations to two more Norair folk, who, by their talent and industry, have earned deserved recognition both at home and abroad.

## New Benefits for Norair, Group Insurance Up, Disability Added

New benefits for Norair personnel in the areas of long term disability, layoffs, and group insurance, have been announced by Corporate Vice-president and Division General Manager Dick Nolan. Effective date is January 1, 1963.

They follow closely the 15-year pension vesting benefit announced last month, and the large scale benefits in increased pay rates, health insurance for retirees, liberalized group insurance coverage and an additional floating holiday each year, granted in August.

### NORAIR NEEDS ENGINEERS

"The added benefits," stated Mr. Nolan, "result from our policy of continued analysis and study of industry practices. The objective of the Company benefit program has always been the satisfaction of the real needs of the men and women of Northrop."

"We feel that these improvements will meet this objective and provide benefits which are comparable to the best in aerospace."

### Long term disability:

Provides no cost protection against loss of income during long periods of total disability. Those totally disabled for more than six months will receive 60 per cent of their wage or salary, the maximum being \$200 a week, up to age 65. Northrop is believed the first in aerospace to provide such a benefit for all personnel.

### Layoff plan improvements:

Increased from \$50 for each year of service up to 10 years with a maximum of \$500, to \$75 for each year of service up to 15 years. The new maximum is \$1125. To be eligible for the plan, layoffs must be as a result of reduction of the working

force. Add note—amounts paid are subject to Federal and State income tax.

Improvements in group insurance:

Diagnostic benefits (X-ray and laboratory) upped from \$25 each six months to \$100 for the calendar year. Dependents are now included.

Supplemental accident benefit increased up to \$100 for each accident, including dependents. Deductible requirements do not apply.

Maternity benefits will now include \$50 to help with the

doctor bill for both employees and dependents.

Major medical deductible provision—\$100 in 90 days—liberalized to \$100 in 120 days. Major medical coverage for dependents increased to 80 per cent from 75, which brings dependent payments up equal with those for Norair personnel.

Dependent coverage cost will be reduced by \$2.82 a month for those with both major medical and basic group insurance. The reduction is somewhat less for those whose dependents are not covered by major medical.

## Northrop Ventura RP-78 In Operational Tests

First operational flights of the Northrop Ventura RP-78 rocket-powered targets have been recently conducted by the U.S. Naval Missile Center at Point Mugu.

Utilizing a 100-pound thrust solid - propellant rocket engine, the RP-78 was launched at high

1.3. A significant number of hits have been scored on the sleek, 9-foot target by all-weather jet fighter aircraft firing air-to-air missiles.

The RP-78 is the newest member of the Northrop Ventura family of high performance rocket-propelled missile targets. Northrop Ventura's RP-76 rocket - propelled drones have flown more than 1800 missions for the U.S. Armed Services at United States and Far East target ranges.

The RP-78 will provide the Navy with a missile target affording great flexibility for fleet units during their defense training operations.

Northrop Ventura Division also provides complete RP-78 flight services for the Navy at Point Mugu.

### REMINDER

Don't forget "Northrop Night" at the IAS. Date is December 14.

altitude by an F-89 jet aircraft more than 100 miles at sea over the Pacific Missile Range. Controlled from San Nicolas Island tracking station throughout the mission, the targets have been flown at altitudes in excess of 68,000 feet and speeds of Mach

## Top Honor for Pilots



**IN SAFE HANDS**—Company executive transport pilots from left, Jack Miller and Tom O'Malley, were honored by the National Business Aircraft Association for logging respectively 800,000 and 600,000 miles on passenger flights in Division airplanes without an accident. Max Stanley, chief, Norair Flight Support Operations, at right, presents the scrolls in behalf of NBAA. Tom has been flying for Northrop since 1951, Jack since 1954.

## Yule Parties Planned for Desert Folk

Palmdale and Edwards Norair personnel are preparing to celebrate the Yule season in the best tradition.

Weekend after this will be an exciting time for both mom and dad and all good little desert juniors.

### REFER ENGINEERS

On December 14, Friday evening, the Antelope Valley NRC will hold their regular Christmas dance. Location will be the North (Continued on Page 4)

## NRC Dance—Ambassador December 8

The NRC banner headline of the year will be the annual Holiday Dance scheduled just three days away, December 8 at the Ambassador Hotel.

"This will be a super gala affair," states Fred Armstrong, NRC president. "We have reserved three big ballrooms for the Northrop party. Each ballroom will have its own orchestra. The festivities will begin at 8 p.m. with a social hour and from 9 o'clock dancing and entertainment will hold sway until the wee hours."

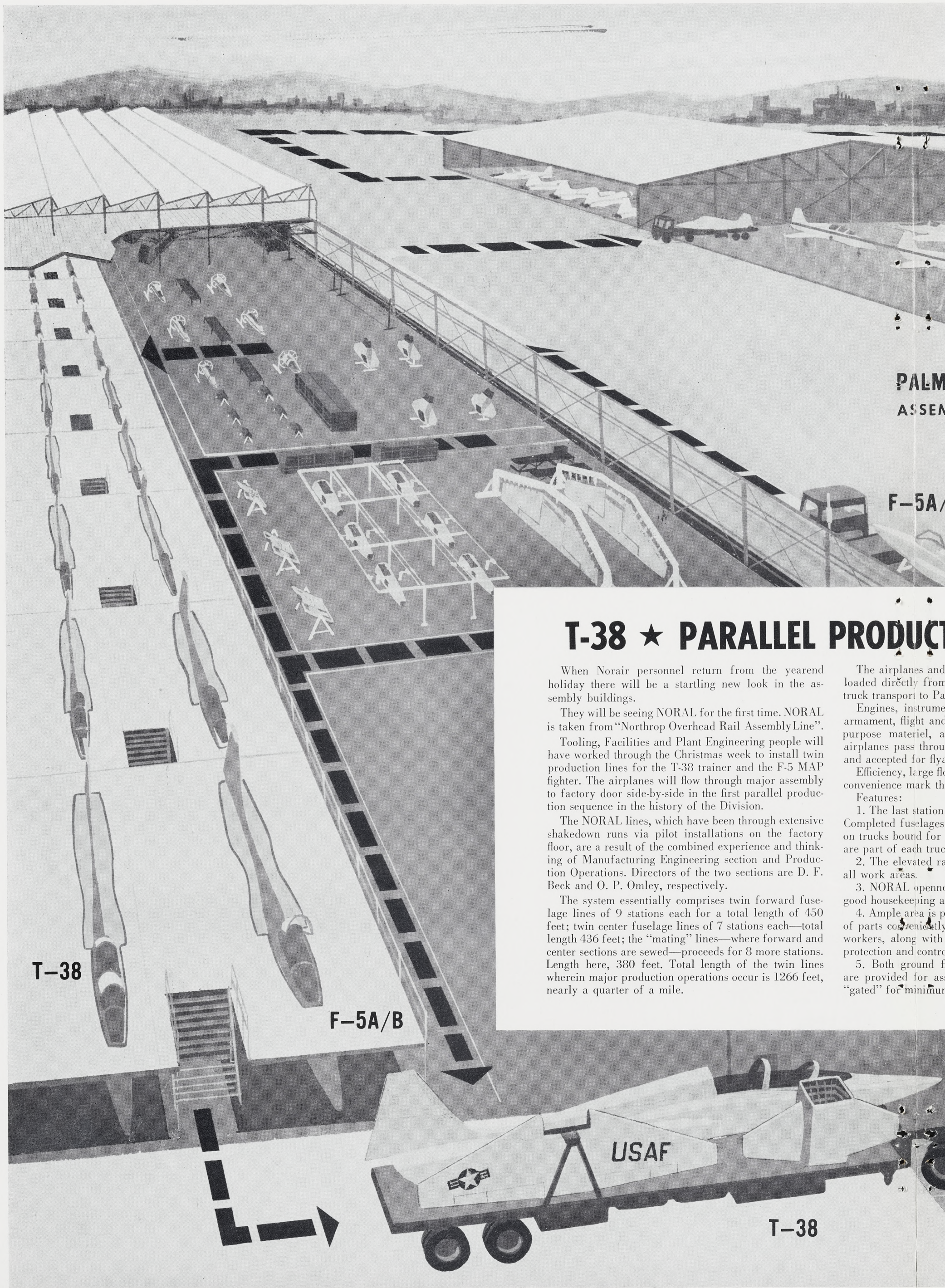
### EARN REFERRAL AWARDS

The bands playing for this big NRC night out bridge the spectrum of popular music. In the Sunset Room there will be Carroll Wax and his 12-piece orchestra. (Continued on Page 4)

## Twin Production Lines

(See inside spread)





PALM  
ASSEMBLY

F-5A/B

T-38

F-5A/B

## T-38 ★ PARALLEL PRODUCTION

When Norair personnel return from the yearend holiday there will be a startling new look in the assembly buildings.

They will be seeing NORAL for the first time. NORAL is taken from "Northrop Overhead Rail Assembly Line".

Tooling, Facilities and Plant Engineering people will have worked through the Christmas week to install twin production lines for the T-38 trainer and the F-5 MAP fighter. The airplanes will flow through major assembly to factory door side-by-side in the first parallel production sequence in the history of the Division.

The NORAL lines, which have been through extensive shakedown runs via pilot installations on the factory floor, are a result of the combined experience and thinking of Manufacturing Engineering section and Production Operations. Directors of the two sections are D. F. Beck and O. P. Omley, respectively.

The system essentially comprises twin forward fuselage lines of 9 stations each for a total length of 450 feet; twin center fuselage lines of 7 stations each—total length 436 feet; the "mating" lines—where forward and center sections are sewed—proceeds for 8 more stations. Length here, 380 feet. Total length of the twin lines wherein major production operations occur is 1266 feet, nearly a quarter of a mile.

The airplanes and loaded directly from truck transport to Palm Springs.

Engines, instruments, armament, flight and purpose materiel, as airplanes pass through and accepted for flight.

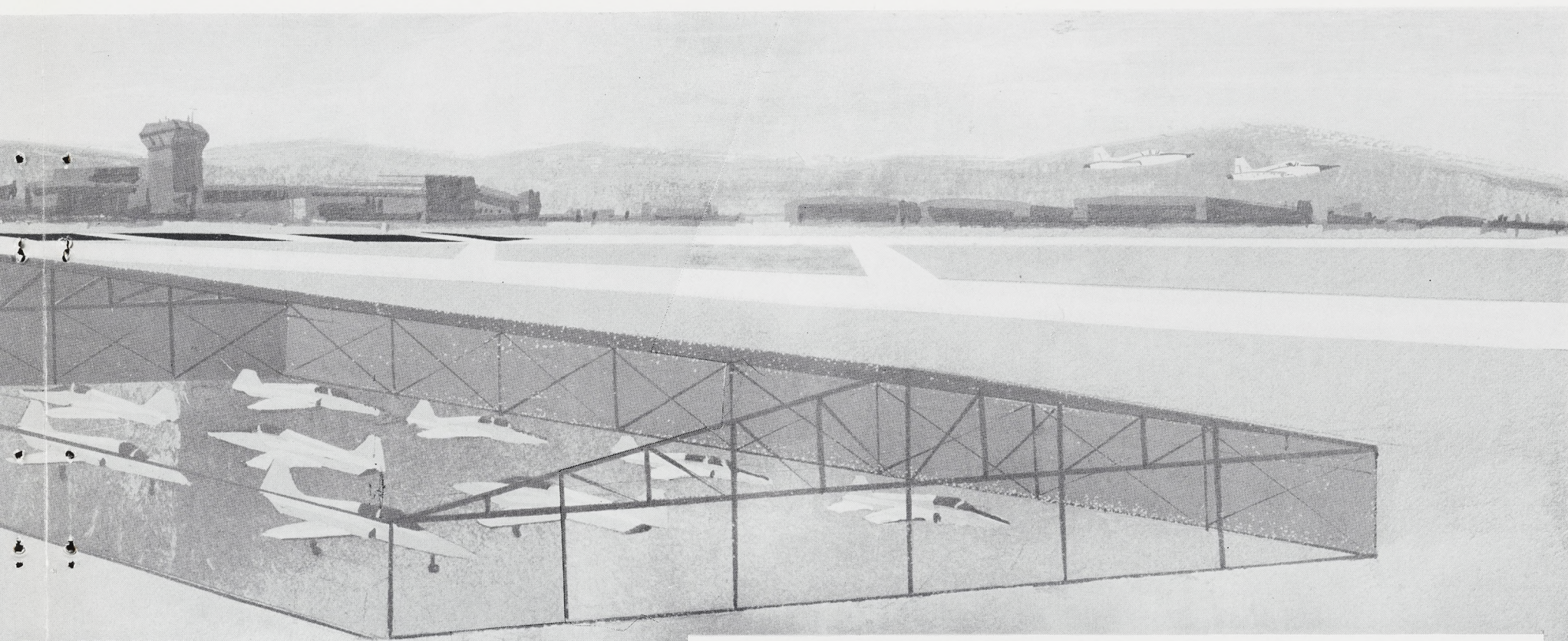
Efficiency, large floor convenience mark the features:

1. The last station Completed fuselages on trucks bound for are part of each truck.
2. The elevated rail all work areas.
3. NORAL open good housekeeping a
4. Ample area is p of parts conveniently workers, along with protection and contro
5. Both ground f are provided for ass "gated" for minimum

USAF

T-38





## PALMDALE

### ASSEMBLY AND FLIGHT TEST PRODUCTION

F-5A/B

## DUCTION ★ F-5

airplanes and wings, not yet assembled, are then directly from the last stations for over-the-road transport to Palmdale final assembly and flight. Instruments, and equipment items such as flight and navigation aids and other special materiel, are added at Palmdale. Here the jets pass through final inspection, are test flown, and are then prepared for flyaway delivery by the USAF.

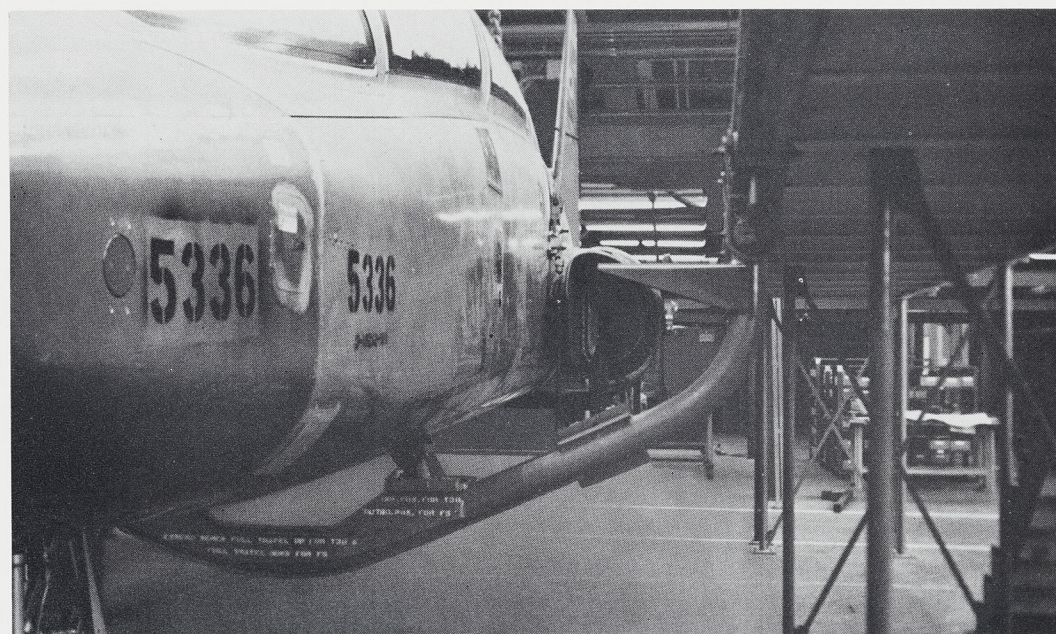
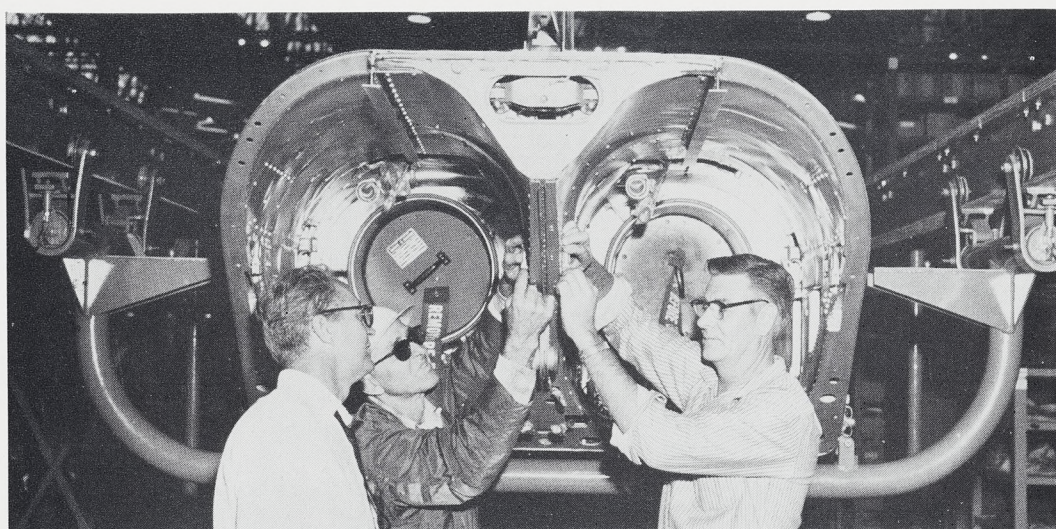
Efficiency, large flow acceleration factor, neatness and precision mark the NORAL production concept.

Each last station in each line is a shipping position. Completed fuselages are loaded directly from the rails and bound for Palmdale. Wings and aft fuselages are loaded on each truckload package.

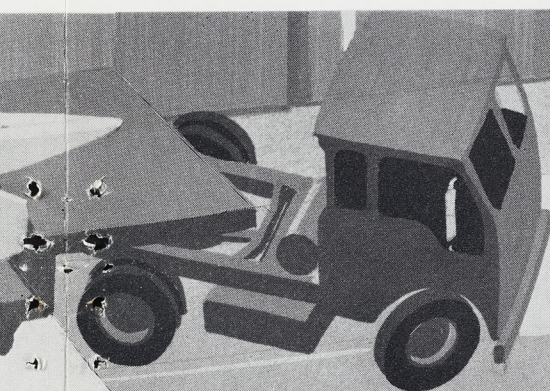
The elevated rail system provides ready access to all areas.

NORAL openness creates an ideal atmosphere for housekeeping and good workmanship.

ample area is provided for maximum line stocking conveniently located in close proximity to line along with tools and fabrication aids. Better management and control of stocked parts is also provided. Both ground floor and platform work positions are provided for assembly efficiency, and are readily accessible for minimum preparation when the line moves.



NORTHROP OVERHEAD RAIL ASSEMBLY LINE



TRANSPORT TO PALMDALE

**HAWTHORNE**  
PRODUCTION ASSEMBLY OPERATIONS





## RIDES WANTED

7 a.m. — 3:45 p.m.

ROSECRANS &amp; DENKER, Gardena. Sherilyn Sexton, ext. 1658. 329-7069. 2

BOLSA &amp; GOLDENWEST BLVD., Huntington Beach. Stewart Berkis, ext. 2173. TW 7-4851. 2

7:30 a.m. — 4:15 p.m.

LENNOX &amp; HAWTHORNE BLVD., Lennox. Carol Taylor, ext. 2603. OR 2-1881. 3

COMPTON &amp; HAWTHORNE BLVD., Hawthorne. Mary Luzinski, ext. 691, OS 6-9874. 3

8 a.m. — 4:45 p.m.

HILLCREST &amp; EUCALYPTUS, Inglewood. Judy Stewart, ext. 1241. OR 2-1718. 5

AVALON BLVD. &amp; SEPULVEDA AVE., Wilmington. Ken Funk, ext. 2052. 5

INGLEWOOD AVE. &amp; 190TH, Torrance. Patti L. Currie, ext. 518. 519. 5

HWY. 39 &amp; WARNER AVE., Huntington Beach. Phil Baaqett, ext. 516, 517, 847-5232. 5

ROSCOE &amp; TOPANGA CANYON, Canoga Park. John Dennis, ext. 4008, DI 0-8274. 5

## RIDES OFFERED

7 a.m. — 3:45 p.m.

BOLSA &amp; GOLDENWEST BLVD., Huntington Beach. Stewart Berkis, ext. 2173. TW 7-4851. 12

8 a.m. — 4:45 p.m.

HWY. 39 &amp; WARNER AVE., Huntington Beach. Phil Baaqett, ext. 516, 517, 847-5232. 15

ROSCOE &amp; TOPANGA CANYON, Canoga Park. John Dennis, ext. 4008, DI 0-8274. 15

## REFER ENGINEERS

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

OLDSMOBILE 88 Holiday Coupe, 1960. 1-owner. 18,000 miles. \$1950. 372-8549. A

COLT, Palomino, born in May, \$100. FR 7-4770. A

SECTIONAL, 8'. \$40. 374-2645. A

CRIB, Edison, neutral color, teething rail, double drop sides, Kantwet mattress. \$20. OS 6-9593. A

BICYCLES, boy's, 24". \$15; 26". \$17; heater, elec., w/fan &amp; thermostat, \$10. PL 5-4497. A

TRUMPET &amp; violin, junior-size, \$35 ea.; upright piano. \$100. OS 5-2040. A

BICYCLE, boy's, 26", balloon tires, new fenders &amp; spray paint. \$20. FA 8-3306. A

STUDEBAKER Land Cruiser, 1950, 4-dr sedan, 15 mpa, overdrive, good transportation car. \$115. OS 6-0749. A

ENGLISH FORD, 1961, good transportation car, about 30 mpa. \$850. 674-1672. A

MERCEDES BENZ 190SL roadster, 1961 white w/areen interior, radio, w/w &amp; jump seat. \$4295. 761-3775. A

CAMERA, Primo Jr. super slide, case electronic flash, aadaet bag, access. \$75. HO 3-5496. A

HOUSE, split level, coastline view, Manhattan Beach, 2500 sq. ft., 3-bdrm., 2 1/2 baths, walnut paneled family room &amp; separate dining room, dream kitchen 2 pantries. 20x25 living room, interior garden, 2 fireplaces, beam ceiling, carpets &amp; drapes, built-in cabinets, desk bar, bookshelves, can convert into 4-5 bdrm.. \$59,500. FR 2-5867. A

PLYMOUTH, 1959, V-8, custom suburban, 6-pass. station wagon, torqueflight, r/h overloads, elec. rear window, \$1095. FR 9-8048. A

## EARN REFERRAL AWARDS

CHEVROLET, Biscayne, 1958, auto, trans., w/w, r/h. \$950. OR 8-0766. A

CAR RACK, heavy-duty, \$5. DA 7-9950

CRIB, firm Kantwet mattress, 8 crib sheets. \$25. Box 2401. A

MOTORCYCLE, 1957 Zundapp, 250 c.c., very good condition, \$185. DA 9-6923. A

HO TRAIN, cars, 4'x8' layout &amp; misc. buildings. \$50. 325-3452. A

MERCURY, 1950, new trans., floor shift, new interior, runs good. \$200. PL 5-3101. A

REFRIGERATOR, 10.5 cu. ft., \$75; table lamps, 2 ceramic w/matchstick shades. \$10; 2 brass &amp; Italian glass, \$12; floor lamp. \$3. FR 8-2190. A

## FOR SALE

CEMETERY LOT, Inglewood Park Cemetery, div. B, lot 363, Utopia plot, \$750. FR 4-7761 after 6 p.m. A

FORD, station wagon, 1957, 6-pass., auto, trans., power steering &amp; brakes, T-Bird engine. \$775. DA 6-2453. A

AUTOMATIC TRANSMISSION, 1956 Ford T-Bird. \$75. OS 6-3592. A

MG-TD, 1953, rebuilt engine, new top, good tires. \$600. FR 4-3060. A

HO TRAIN LAYOUT, 4'x7' board folds to 3 1/2'x4' for storage, 2-track loops &amp; 2 sidings controlled from remote panel, fully landscaped, freight &amp; passenger trains w/lighted cars, cost over \$120, \$55; auto, sidewalk-type, gasoline powered, single lever throttle &amp; brake, automatic clutch, reverse gear, bumpers, windshield, aluminum body, 7 mph, \$45. FR 5-0915. A

CADILLAC, 1959 4-dr, h/top, all power, \$2600; cemetery lots, dble. interment, 10 spaces, Inglewood Park Cemetery El Portal section, \$200 each space, cash or terms. DA 9-9464. A

OLDSMOBILE, Super 88, 4-dr, sedan, 1954, power steering &amp; brakes, r/h motor overhauled, new Hydromatic, fuel pump, brakes &amp; shocks, \$395. PL 4-1964. A

SINK, service porch-type, 22"x24", \$10; Rainbird sprinklers, \$2.50; jet pump, deep well, \$92.50; canning jars w/lids \$1.25 doz. VE 7-4237. A

BICYCLE, Schwinn Superior w/stock steel rims &amp; special setup wheels, cost \$200 \$120. 371-6775. A

BOAT, 15' runabout, trailer &amp; 35 hp Evinrude motor, lots of access., \$495. OS 6-6360. A

CABINET, rifle &amp; shotgun-type, used for displays only. 8-gun capacity, laminated, ammo. storage deck top &amp; sides, rustic bronze hinges, natural pine finish, \$150; manale, GE, folding model, chrome stand. \$45. 429-0493. A

CADILLAC, 1950, convertible, good condition. \$225. OR 1-2776. A

DIVAN &amp; CHAIR. \$20. OS 9-6765. A

## EARN UP TO \$200

SURFBOARDS, 8'4", 22 1/2" wide, Grea Noll 2" Balsa stringer; 8'10" Dave Sweet, 22 1/2" wide, \$75 ea. PL 5-2784. A

RELAX-A-CIZOR, used 3 months, cost \$230. \$100. WI 7-8292. A

OUTBOARD, Scott, 7.5 hp, never used. \$175. DU 4-4017. A

F. N. MAUSER, 30-06, w/Weaver K-2.5 scope on Redfield ir. mount, recoil pad, Monte Carlo stock &amp; sling &amp; leatherette case. \$125. LU 5-8748 after 5 p.m. A

STOVE, Maytag, aas, 40", stainless steel burners, rear controls. \$82.50. 295-9997. A

PONTIAC, Catalina, 1955, h/top convertible, r/h, auto, trans., power brakes, good rubber. \$150. OS 5-5067. A

STOVE, apartment-size, 4 burners &amp; oven. \$20. OS 5-0859. A

MERCURY, Monterey, 1957, good tires &amp; transmission, eng. overhaul, short block, r/h, automatic. \$550. TE 5-4802. A

TRAILER, 2-wheel, 7'x8' box w/wheels w/springs, lights &amp; registration. \$75. FR 6-6715. A

SURFBOARD, Gordie, 9', 3/4" redwood stringer, orange pigment, \$75. DA 3-1546. A

COAT, women's winter weight, Miliun lined, a blend of wool &amp; camel hair, size 12, \$20; ski pants, 1 pr., women's, black, size 11, made in France, Ernst Enael designer. \$20. CR 3-2194. A

POOL TABLE, 8' rack, balls &amp; cues, \$70. 831-9707. A

## NORAIR NEEDS ENGINEERS

RANGE, Roper, aas, 6 burners, 2 lacs. ovens, white. \$50. OR 8-6768. A

DINETTE SET, chrome, w/4 chairs, gray &amp; white plastic seats &amp; backs, \$25; breakfast nook, custom-built, yellow Formica floating table top, brown seats. \$60. PL 5-7255. A

TYPEWRITER, Royal Futura 800, portable. \$65; chord organ, 60-bass, \$35; end tables, 2, maple, \$5 ea.; bicycles, boy's, 26" wheels, \$12. FR 5-5760. A

ORGAN, electronic, std. keyboard, w/bass pedals. \$350. 834-2845. A

HOME, 3-bdrm., 2-bath, dinette, 2-car garage, serv. porch, garb. disp., corner lot, richly landscaped in s.w. Compton \$27,000 value, \$21,250. NE 9-0242. A

## WANTED TO BUY

ACCORDION, child's, petite size, used. TE 1-6462. B

RIFLE, 22 cal., semi-automatic, pump. OS 6-8331. B

## RENTALS OFFERED

HOUSE, 3-bdrm., dble. garage, work room, encl. patio &amp; patio room, stove, refrigerator, carpeted, 2 blocks to beach in center of Manhattan Beach, \$180 mo. FR 4-3365. E

## PERSONALS

WILL SHARE modern, 2-bdrm., 2-bath apt. &amp; pool w/young man in Mar Vista area, approx. \$85 to \$90 mo. VE 8-3336 evenins. L

## BRING AN ENGINEER

DRIVING TO Savannah, Georgia December 14, via Hwy. 80, return January 5. Would like 2 or 3 passengers to share expenses. FR 1-5076 after 7 p.m. L

RIDE wanted to &amp; from San Diego daily. Box 2402. L

## NRC Flag Football Champions



**THE WINNERS**—NRC flag football league for 1962 was won by the Plant One team who finished with a perfect score of 6 wins and no losses. From left, standing, Henry Andrews, Bob Martinez, most valuable defensive player; Charles Randall, Charles Talbott, most valuable offensive player, Chester Kennedy. Left, kneeling, Fred Hall, Bob Taaffe, Warren Darst, Mike Bryant, Jim Owens, Gary Bunn, and Frank Warga, playing manager. Plant One scored a total of 222, their opponents 6. Play was held at Alondra Park each Saturday morning. How do you play flag football? It is played like other football except that players dangle a plastic streamer from each hip pocket. You snatch the streamer from the hip pocket and throw it on the ground. A very new game.

## HELICOPTER WILL FLY SANTA TO NORAIR ON DECEMBER 16

Santa Claus will arrive at Norair Sunday, December 16.

He will come swooping in from the frozen wastes of his North Pole facilities. He will

## Angel Brass To Feature M-C Meet

Sports night with a dash of Christmas.

Northrop Management Club President Al Binsacca announces that the next dinner meeting will be held in the Crystal Room at the Thunderbird Hotel Friday, December 7. The Thunderbird is located at 525 North Sepulveda, El Segundo.

Feature of the evening is a guest roundtable of speakers from the Los Angeles Angels including Bob Reynolds, president; Gene Autry, owner; old-time Northrop man Rosie Gilhausen, now head area scout for the Angels; George Bryson, Public Relations and game announcer; and Tom "Plowboy" Morgan, second baseman.

On the Christmas side the NRC Symphonaires' 30 voices will present a special program of favorite Yuletide numbers.

There will be surprise table favors and scads of prizes.

"Visit the spirits" hour starts at 5 o'clock. Dinner is at 7:30.

## FOR SALE OR TRADE

BARBELL SET, \$15; doodle bug, 2.5 hp engine in good running condition. Hiawatha frame, good tires, \$50 or trade for 9' surfboard. DA 7-0304. M

TV, 21", blonde, Silvertone, new picture tube, \$45 or trade for an article of comparable value. EA 2-2548. M

## Northrop Norair News

VOL. 20 NO. 24

1001 E. Broadway, Hawthorne, Calif. A NORTHROP CORPORATION PUBLICATION

NORAIR DIVISION

Published every other Wednesday

CHARLES BRADFORD, Editor

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Outside lines—OR 8-9111, OS 5-4611.

be riding Rudolph the Red-nosed Helicopter as Dancer and Prancer and the rest of the reindeer are being saved for worldwide chimney visitations on Christmas Eve.

Rudolph the Red-nosed Helicopter will put Santa down in front of the Administration Building where the old gentleman will be greeted and cheered by hundreds and hundreds of Northrop children plus a scat-

and dads.

Naturally there will be a crowd and those juniors who wish to tell Santa personally what they want for Christmas might have to wait their turn in line. Anticipating this, benches will be provided along the route to Santa's knee. Coffee wagons will be close by.

## December 8

(Continued from Page 1)

tra and a vocalist. In the Boulevard Room there will be Cappy Lewis and his group of eight, also with a vocalist. In the Ambassador Room there will be the Latin beat with Henry Miranda's orchestra, seven strong.

Tickets to the Holiday Dance are only \$1.55 and are now available at all Personnel Activities locations or from NRC Council affiliates.

There is a secret calculated to keep everyone in suspense until the right time. This will be a "surprise door prize."

President Armstrong has seen to it that personal invitations have been distributed by organization clerks to Northrop personnel as a reminder that everyone from Prairie to Crenshaw has a date December 8 at the Ambassador Hotel.

## Christmas Bowling

Deadline for Entries

tering of grownups.

Time of his arrival is noon sharp.

After acknowledging greetings of the happy throng, Santa will make his way to the Product Display Building where he will be on station until 4 p.m.

Fred Armstrong, NRC president, states categorically that everything will be bigger and better this year. There will be more toys, more candy, more ice cream, more clowns, and more fun for the juniors and for moms

## Desert Yule

(Continued from Page 1)

American Recreation Clubhouse, Avenue Q and 31st Street.

Dale Nichols and his "Cinema City Six" will play from 9 in the evening until 2 in the morning.

Bring your own Yule fuel, says Tom Post who is planning the event.

Shortly thereafter, December 16, Sunday, will be the big day for the kiddies. Again Palmdale and Edwards will get together for their annual Christmas party, complete with Santa Claus, streamers, gifts galore, candy, and other Christmas fun. This will also be held at the North American Clubhouse. For the time of Santa's arrival, check with organization clerks.

## PRESEASON HOOP PLAY UNDERWAY AT LEUZINGER

The NRC double elimination preseason basketball tournament is now under way at Leuzinger gym.

Play is on Wednesday evenings, 7 to 10 p.m. and Saturdays, 10 a.m. to 2 p.m.

More players are needed and those interested are asked to report to the gym on day of play. Who knows? You might be an Elgin Baylor or Jerry West, maybe even a Wilt "the Stilt."

Regular basketball league play begins in January. Games will be on Thursday evenings and Saturday mornings.

In addition to more players, more spectators are needed.





## Jones, Nolan to Address Personnel

### A Merry Christmas

### And Happy New Year



To all Northrop Personnel:

In the traditional spirit of the holiday season I am happy to wish you a Merry Christmas.

The spirit of Christmas, of course, reaches beyond our own immediate area of work and circle of friends. Nevertheless, it gives me the opportunity to thank each and every one of you for the loyal and dedicated work you performed during the year.

In a growing company such as ours, men and women and the human relationships are the most important resources for the achievement of success. I congratulate you for your contribution and part in making Northrop a good place to work.

Mrs. Jones and I extend our best wishes for the season and coming year.

**THOMAS V. JONES**  
President, Northrop Corporation

To the People of Northrop Norair:

This year has been one of the most significant periods in the history of this division. Your all-out team spirit, your fine workmanship, your willing and conscientious efforts are responsible for it, and I wish to take this yearend opportunity to thank you all.

With your kind of support we can look forward eagerly to the challenges of the coming year, confident that Northrop Norair will not only meet them but will go on to even greater achievements.

Thanks again, and Merry Christmas and a very Happy New Year from Mrs. Nolan and myself.

**DICK NOLAN**  
Corporate Vice-president  
and Norair General Manager

### COMBINED DAY, NIGHT SHIFT MEETING TOMORROW AFTERNOON

Northrop Corporation President Thomas V. Jones with Dick Nolan, Norair general manager and vice-president of the Corporation have announced plans to address personnel on Division affairs tomorrow, December 20.

**It will be a combined day and night shift meeting. Time is from 3:15 to 3:45 p.m., the period during the day when large numbers of people can be easily assembled.**

Mr. Jones and Mr. Nolan will speak from a raised platform in the new assembly building extension at Plant One. A public address system will be provided so that they can be readily heard.

Mr. Jones will give an assessment of the Company as a whole and talk about the outlook for the future.

**Stated Mr. Nolan, "I am extremely proud to be able to bring our president, Mr. Jones, to Norair Division where your good work and conscientious efforts have enabled us to keep our defense contracts on schedule and with products of the highest quality."**

"The assembly building extension, which after the yearend holiday will house the twin production lines for the T-38 and the F-5, provides a good place to talk.

"Speaking to you personally

during such busy times as these is a rare opportunity. Both Mr. Jones and myself look forward with pleasure to this meeting. I am sure the report we bring will be of interest and satisfaction to all."

Complete instructions together with a message from Mr. Nolan were issued with paychecks last week to all personnel. This issue the Norair News prints a map giving the location of the meeting area in the extension to the new assembly building and how to get there.

In order that as many as possible attend, clocking in and out schedules for the afternoon have been changed as follows:

**First shift:**

Hourly employees whose shift ends at 3:45 p.m. will clock out at 3 p.m. and will be paid to end of shift.

Maple and Mariposa facility employees will clock out at 2:45 p.m. in order to permit sufficient traveling time to Plant One and will be paid to end of shift.

All other first shift employees will return to their work stations after the meeting and clock out at their regular time.

**Second shift:**

All second shift employees will clock in at 3 p.m. and will clock out at 11:30 p.m.

To avoid traffic congestion

(Continued on Page 3)

## MILESTONE FOR LFC



**THE X-21**—An important point of progress was reached Saturday morning, December 8, for Northrop's Laminar Flow Control technological airplane project. At 7:15 a.m. with the fuselage out of the high bay and waiting on the apron, a great "cherry picker" from Owl Truck in Compton reached in through the door and deftly lifted the newly completed multimillion dollar wing from its assembly supports, drew it into the open air, wheeled ponderously, and lowered it, ever so gently to its attach fittings. And the X-21 had taken shape, a sleek and graceful airplane, the newest of the new in the aerospace age. The

next day, Sunday, the big Air Force research ship, by now on its wheels and clean of tooling and leveling jacks, was moved back into the hangar to begin installations of instruments and equipment. Flight date is scheduled for March. Norair man in charge of this important Saturday-Sunday operation was Jack McFall, general foreman, LFC Assembly. To him and his men go credit and an extra extra Merry Christmas for a critical job well done. Owl Truck boss on the job was superintendent Harold DeNike; operator of the "cherry picker" was Owl's Gene Jacobson.



## We Pause

Surely, no other personnel benefit in the aerospace industry has brought forth more comment (all favorable, they tell me) than our Northrop 40-hour yearend holiday. Inaugurated in 1946, it has since provided a full week's holiday with pay to both hourly and salaried personnel. We like it.



In a few days time we will be starting our annual fiesta. In our wallets this Friday will be an extra week's paycheck to help us meet those unexpected last minute demands from Santa or to buy that bus or plane ticket to join the folks back home at Christmas.

Looking forward to our mid-winter break has become a pleasant routine with all of us. With "visions of sugarplums dancing in our heads" we approach that time of the year when the work bench is replaced by the family hearth; the time we "adopt" a

family in need; that time when we set aside our work problems and remember with gratitude those whose friendship and co-operation have contributed to our happiness during the year—yes, that time when we catch up on

By John B. Clark

being the greatest mommies and daddies, sisters and brothers, grandmas and grandpas, uncles and aunts to those we love.

Yes, that time is here again. Many tell us it is a "plus" that helps make Northrop a good place to work.

With a good year behind us, we lay aside our tools of labor for a spell and refresh both body and spirit.

Have a wonderful holiday. We'll be seeing you all on January 2 when we will begin the biggest, most successful year in Norair history.

Until then—

"Happy holly to you all."



**A MUCH HAPPIER CHRISTMAS**—Had these three Norair workers not been wearing safety glasses, the Yule season might have been a time of misfortune and trial. From left are Billy Lipphardt, Herbert Flanagan, and Rose Prongue, who join the Wise Owl Club by virtue of the safety glasses worn when a plastic foam gun malfunctioned and released hot foam. Note heavy coating of polyurethane on their glasses following the accident. Billy, Herbert and Rose wish everyone a Merry Christmas with the admonition, "be wise, protect your eyes, the tool cribs have glasses just your size."

## John Chapman Awarded Science Writing Honor

John L. Chapman, Northrop Corporation Public Relations writer and editor, is the winner of



JOHN L. CHAPMAN

the \$1000 prize in the magazine category of the 1962 Science Writing Awards competition sponsored by the American Association for the Advancement of Science and the Westinghouse

Electric Corporation.

Two prizes are awarded each year for the most outstanding science writing to appear in the nation's newspapers and magazines of general circulation. A panel of six judges, prominent in the fields of journalism, science, and public affairs, voted on the many selections submitted this year.

Mr. Chapman, editor of the "Northrop Technical Digest," won the award for his article, "The Uncanny World of Plasma Physics," published in "Harper's Magazine" in October 1961. He was motivated to write the article as a result of his investigations of Northrop achievements in the field of plasma physics.

The judges were unanimous in their very high rating of the article, according to the AAAS. Mr. Chapman will be given the award at the annual dinner of the National Association of Science Writers on December 27.

## Organizations List Services For Holiday

Norair Service organizations have issued their holiday-affected schedule of operations and things to remember.

Payroll, George Forbes, paymaster, has announced that pre-holiday paychecks, salary and hourly, for both the second and third shift will be available to the clerks for distribution at 3 p.m., Thursday, December 20. The first shift checks will be ready Friday morning, December 21 at 8 a.m.

Checks distributed at that time will be for the week ending December 16 and the yearend holiday. The yearend holiday checks will be fatter. Bond deductions and/or Credit Union deposits or loan payments will not be taken out. Deductions as usual, however, for the check for week ending December 16.

Upon return after New Year's, first pay day will be Friday, January 4, for the second and third shift; for the first shift, on the following day, January 5.

For detailed information on holiday pay schedules check with organization clerks.

Yearend holiday mail and telephone services will be just about "business as usual," it is announced by Byron Bonnett, director, Management Research.

The Hawthorne switchboard will be open for regular day-night service throughout the entire time with the exception of Christmas and New Year's Day. The board will close early in the evening, however, on December 22, 23, 29 and 30.

The Mariposa switchboard will be closed during the holiday period. Calls for that facility will be taken care of at Hawthorne.

The Beverly Hills switchboard will be open daily all during the Christmas week except Saturdays, Sundays, Christmas and New Year's.

Telegraph and teletype service will be available at the Hawthorne Communications Center on all days except Saturdays, Sundays, Christmas and New Year's.

The Norair Mailroom will provide limited half day service—from 8 to 12 noon—on December 22, 26, 27, 28 and 31.

Correspondence Control will be closed during the entire period.

Industrial Relations, John B. Clark, director, advises that the Norair Group Insurance office will be closed during the holiday and it is urged that all personnel and their dependents who anticipate entry into a hospital during the period should try to get the necessary forms by the close of shift, Friday, December 21.

Norair hospitals and dispensaries will be closed. However, emergency medical care for personnel on the job will be handled through Plant Protection, 2211.

Cafeteria will be closed.

## Northrop Norair News

VOL. 20 NO. 25

1001 E. Broadway, Hawthorne, Calif.  
A NORTHROP CORPORATION  
PUBLICATION  
NORAIR DIVISION  
Published every other Wednesday  
CHARLES BRADFORD, Editor

Permission to publish material with credit to Northrop Norair News will be granted. News office extension—2456. Outside lines—OR 8-9111, OS 5-4611.

## Yuletide Greetings

Merry Christmas and a happy holiday season to all Northrop people everywhere around the globe from here to Greenland, to France, to Beirut, to Tahiti. Best wishes to all.

## In the U.S.A.

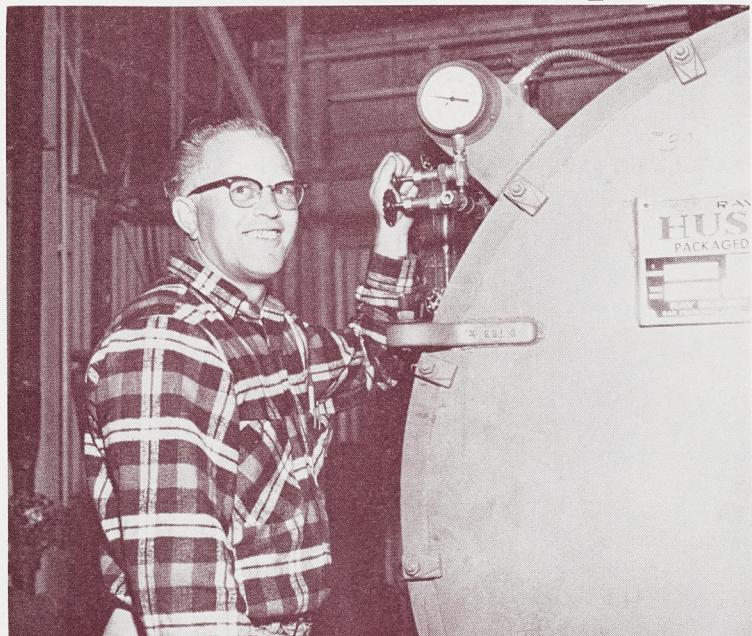
Huntsville, Alabama  
Fort Huachuca, Arizona  
Litchfield, Arizona  
Scottsdale, Arizona  
Williams AFB, Arizona  
China Lake, California  
El Centro, California  
Point Mugu, California  
Cape Canaveral, Florida  
Eglin AFB, Florida  
Tampa, Florida  
Des Moines, Iowa  
Salina, Kansas  
Boston, Massachusetts  
Lexington, Massachusetts  
Needham Heights, Massachusetts  
Norwood, Massachusetts  
Ann Arbor, Michigan  
Omaha, Nebraska  
Little Falls, New Jersey  
Gobbler's Ridge, New Mexico  
Holloman AFB, New Mexico  
Monsey, New York  
Utica, New York  
Dayton, Ohio  
Olmstead AFB, Pennsylvania  
Charleston, South Carolina  
Rapid City, South Dakota  
El Paso, Texas  
Houston, Texas  
Randolph AFB, Texas  
Reese AFB, Texas  
San Antonio, Texas  
Webb AFB, Texas  
Bellevue, Washington  
Washington, D.C.

## Across the Seas

Canada  
Caroline Islands  
France  
Germany  
Greece  
Greenland  
Guam  
Iceland  
Italy  
Japan  
Lebanon  
Libya  
Okinawa  
Philippines  
Spain  
Switzerland  
Syria  
Tahiti  
Turkey  
United Kingdom  
Vietnam  
Wake



## A Child was Playing



**JIM LA MONT**—A gold cap for fast thinking.

Christmas is as good a time to speak of heroes as any other time. Jim LaMont, Norair plumbing leadman, was instrumental recently in saving a life. Jim is a 14-year man and has never been late or absent. He has had pneumonia twice since working at Norair. "But fortunately," says Jim, "I had it on weekends." The story of his quick-thinking is best told by Tedd Thomey, reporter for the Long Beach Independent-Press-Telegram . . . Said Mr. Thomey in his column:

If this department could award a solid gold radiator cap or perhaps a diamond-studded steering wheel to outstanding drivers, Jim LaMont of Compton would certainly receive one for a bit of super-quick thinking he did the

other day.

While driving along Long Beach's Ohio Avenue toward Pacific Coast Highway, Jim noticed a Jeep station wagon backing from a driveway. The station wagon driver obviously did not see a child playing blissfully in the driveway a few feet away.

Jim honked his horn, but the station wagon did not slow down. So—quick as a flash—Jim shot his white Pontiac across the curb and onto the driveway, blocking the station wagon's rearward progress—and undoubtedly averting a major tragedy.

Nice going, Jim.

*Reprint with permission from the Long Beach Independent-Press-Telegram*

## A Letter to the Editor

To the Editor of the Northrop-Norair News:

This is the auspicious time of year to express these feelings, although these sentiments carry strong throughout the year.

I am grateful to be a member of a Northrop team that contributes significantly to the defense of democracy and to the intense fight for preservation of peace.

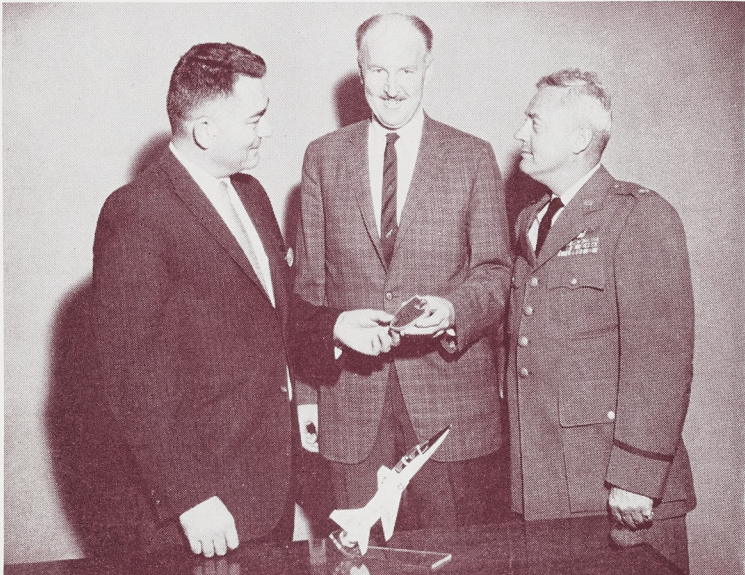
I respect the strong leadership that guides us unerringly to this goal.

I am thankful for the countless benefits bestowed upon me as an employee, and feel that the greatest majority of employees share these feelings for their benefits. I will strive to be worthy of these benefits.

I appreciate the fact that I am fortunate to work in one of the companies that has the best working conditions in America.

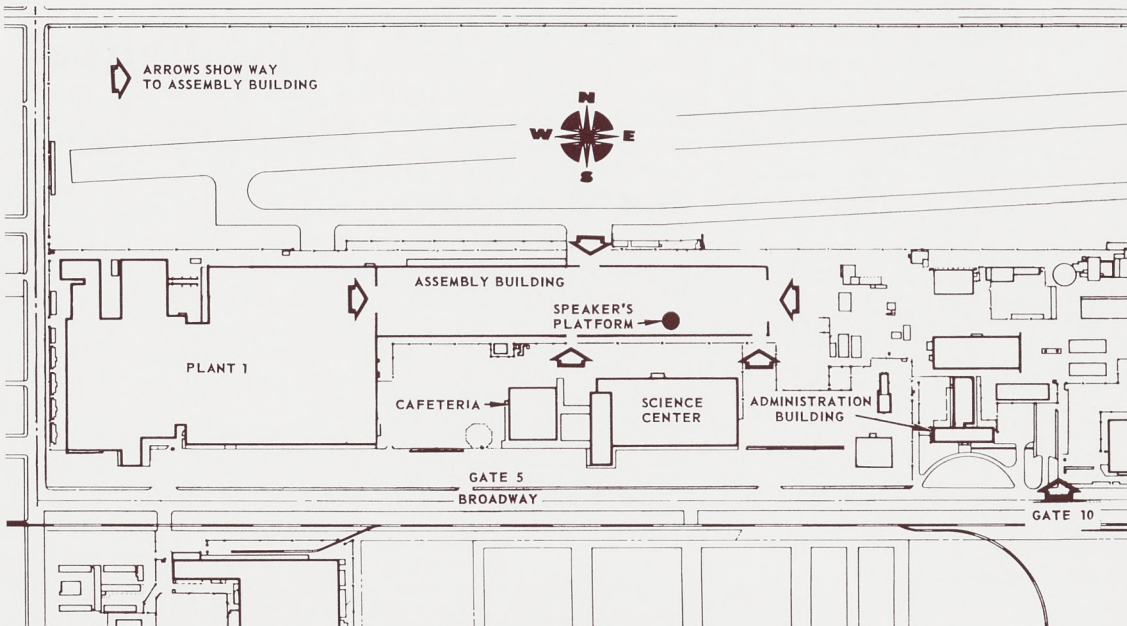
I thank God I live in America.

*Sincerely,  
George J. Lanko  
Leadman, 9620*



**TALON PLAQUE FOR AN AUTHOR**—Charles I. Coombs, center, author of upcoming book titled "Aerospace Pilot", following a hop in the T-38, is presented with Order of Talon plaque by Don Roberge, Northrop Norair Public Relations manager. Offering congratulations at right is Major Victor Irons, Los Angeles area USAF press officer and coordinator of Air Force participation in the flight. T-38 plays feature role in Mr. Coombs' new book which will be brought out in the spring by William Morrow.

## Location of Assembly Building



**TO REVIEW 1962 AND LOOK TO THE FUTURE** — Northrop Corporation President Thomas V. Jones and Corporate Vice-president and Norair General Manager Dick Nolan will address all personnel tomorrow, December 20, at 3:15 p.m. This map shows location of meeting in the extension to the new assembly building. Those working in the plants should leave automobile where it is and walk to avoid traffic jam and parking problems. Those coming in, such as second shift and Mariposa, can park in Lot O or enter Gate 10 and park at edge of flight field. See story for details.

## Horner Voted Membership on ARS Board

Northrop Corporation Senior Vice-president and General Manager, Northrop Space Laboratories, Richard E. Horner, has been elected to the board of the American Rocket Society, Southern California section, it has been announced.

Mr. Horner joins other newly elected board members, Dr. Adolf Thiel, vice-president, Space Technology Laboratories, Redondo Beach, 1962 ARS president; Charles Trent, associate director, Nerva Operations, Aerojet-General; Dr. Robert S. Levine, associate director, Research department, Rocketdyne Division, North American Aviation, Inc., Canoga Park; and Dr. Ralph Saberski, professor of mechanical engineering at the California Institute of Technology, Pasadena.

Remaining on the board of di-

rectors to complete two-year terms are Dr. Robert Dillaway, Rocketdyne; Dr. James Fisher, Applications Research Corporation; Dr. Jack Froelich, Space-General; and Robert Sears, Hughes Aircraft.

President of the more than 4000 ARS local members is Don L. Walter, vice-president, Mar-

quardt Corporation.

The oldest, largest and most rapidly growing professional group for space and rocket scientists and engineers in the world, the American Rocket Society lists 53 local sections in principal areas of missile and space activity throughout the nation.

## Ready for The Ladder



**CANDIDATES FOR FOREMANSHIPS**—Norair Manufacturing Operations men complete 18 weeks of pre-supervisory training to prepare them for promotions to management positions when opportunities arise. L-R, seated, student Bill Martin; John Breneman, director, Operations (nights); C. Z. Stine, general supervisor, Education and Training group; John B. Clark, director, Industrial Relations and Security; O. P. Omley, director, Production Operations; C. L. Beuchat, instructor; student Leon Ockerman. Standing, students Harold Heimbuck, Raymond Cook, James White, Willard Hall, Roy Lloyd, Joseph Adams, Jack Wilson, Joseph Harris, and Ivan Bridges. The program is designed to provide candidates with theory and practice of being a supervisor. Half of training time is spent under direction of the "pros"—regular supervisors with long experience.





## RIDES WANTED

7 a.m. — 3:45 p.m.

CRENSHAW & 235TH, Torrance. Edna Berrv. ext. 1200. 4266. OS 5-0859. 2  
120TH & LA CIENEGA OR IMPERIAL & LA CIENEGA, Inglewood. Kathleen Tiff. ext. 2582. OS 6-4126. 2

7:30 a.m. — 4:15 p.m.

CULVER BLVD. & SAN DIEGO FWY., Culver City. E. D. Peden, ext. 4284. EX 1-7014. 3

8 a.m. — 4:45 p.m.

BUCKTHORNE & GREVILLE, Inglewood. Minnie C. Lauer, ext. 2191. OR 4-1847. 5

BOLSA CHICA & HEIL, Huntington Beach. Frances White, ext. 2123. 2470. VI 7-4737. 5

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

METROPOLITAN, 1959, 36,000 miles, 28-mpa. r/h, w/w, orig. owner, \$675. WH 1-3660. A

HILLMAN, Estate Wagon, 1958, 4-dr., r/h, new battery, generator & volt. regulator, 4-spdl., \$598. FR 5-4652. A

IMP. DOLL HOUSE, comp. furn., \$20; baby playpen, Cosco, \$12.50. NO 5-3666. NO 4-4083. A

STOVE, 4-burner, apt-size, \$12; lantern, gasoline, single. \$5. FR 2-0149. A

PORSCHE, coupe, 1955, \$950. CL 6-0167. A

KITCHEN SET, chrome, w/leaf, table & 4 chairs, yellow, \$15; Chevrolet, 1954 Belair, w/poweralide, r/h, new tires & batterv. \$350. OS 5-5258. A

CHEVROLET, 1956 Belair, 2-dr., V-8, h/top sport coupe, turquoise & white, poweralide, r/h, w/w, tinted glass, power brakes & steering, many extras, orig. owner, 58,000 miles, \$950. 674-1059. A

SPEED BOAT, 16' fiberglass, w/steel trailer, \$175. CR 5-4922. A

LOT, Salton Sea, near new arena, small down payment, take over balance due at \$30 mo., \$3195. OS 9-3868. A

RANGE, Autolec, aas, about 1956, \$30 FR 7-4437. A

GENERATOR, 3 KW, 120 volt, aas driven auto, regulator, \$125. EM 1-3741. A

TIRES, 2, new, 560x15, used 1 month, orig. cost \$16.50 ea., \$10 ea. 675-8332 after 5:30 p.m. A

MICROMETERS, 1 pr. ea., new, Brown & Sharpe, 1" & 2", \$28. 323-5951. A

PIGEONS, 5 show-type & cnaes, \$20; house pipe snake, 50', \$15; dining room set, dark mahogany, \$35; patio umbrella table w/benches, \$15; shopping cart, \$3 TE 3-8576. A

BAVARIAN CHINA, service for 8 plus serving pieces, \$25; sofa, rose velvet, Duncan Phyfe-style, foam rubber cushions & mahogany trim, \$50. FR 7-2294. A

SAXOPHONE, Conn E flat alto, cost \$275, \$200; Cadillac convertible, 1954, wire wheels, cont. kit, new white top, \$475. OS 6-5634. A

BICYCLES, 24", \$7.50; 20", \$7.50; bedroom set, lime oak, \$50; end tables & coffee table, \$10. DA 4-6203. A

DESK, mahogany, 9-drawers, 20"x42", \$30. OR 2-2969. A

SEWING MACHINE, Kenmore, straight stitch, w/carrying case, \$30; amplifier, Heathkit, preamp, FM-tuner, folded horn speaker system, \$75. FR 9-5690. A

MERCEDES 220S, 1961, sedan, 15,800 mi., white-arev. sunroof, orig. owner, \$3400. FR 9-9842. A

SCREEN, glass-beaded, 30"x40" on roll-up reel, w/table stand, \$3. OX 9-6181. A

KARMIN GHIA, coupe, 1959, Judson super charger, safety belts, w/w Dunlap, new spare, Blaupunkt 3-band radio heater, \$1400. WE 3-6665. A

WASHER, Blackstone, deluxe, automatic, 8-yr-old, \$35. OR 1-6091. A

PINTO PONY, 13-hands, English or Western trained, excellent jumper, \$450. FR 7-3487. A

FURNITURE, 1 1/2-yr-old, sectional, living room, 4-pc., 2 full-size bedroom sets, kitchen set, lamps, end table, \$500. FR 8-2055. A

BOAT TRAILER, 12', 16" wheels, \$5; 2 small boat sand dollies, \$10 ea. OS 6-8841. A

KITTENS, Siamese, pedigree papers, bluepoints & seal points, 6-wks & 9-wks-old, \$25 & \$35. OS 5-1842. A

## FOR SALE

DESK, child's, maple, & chair combination, \$15. 931-5621. A

CORVAIR, 1960, 4-dr., r/h, w/w, stick shift, \$1000. OS 5-6280. A

TRAILER, 2-wheel, 4'x7'x3' box, lights, \$50. OS 6-4388. A

FORD, convertible, 1951, engine in good running condition, \$50. FR 5-5139. A

C-B RADIO EQUIPMENT, new executive 100 transceiver w/110v-12v plugs, Rialock mobile rack, Stinger mobile ant., clr. ard. plane ant, w/30' mast, 100' RG8 cable & nylon guy lines, \$250. DA 6-1572. A

TV, Westinghouse, color, rebuilt tuner, dark mahogany cabinet, \$125. OS 5-0447. A

BICYCLE, deluxe, boy's, 26" wheels, w/w, chrome lite, fenders & wheels, black frame, coaster brake, front carrier, \$40. DA 6-4045. A

DRAFTING MACHINES, K&E w/scales, \$65. FR 8-5810. A

APARTMENT BLDG., 4-unit, 1 3-bdrm. studio-type, 1 3/4 baths, fireplace, 1600 sq. ft.; 3 2-bdrm. units, 900 sq. ft., sliding glass door to patios, builtins, disposals, carpets & drapes, carports, laundry room plus owner's shop or storage room, walking distance to Northrop & shopping, \$58,750. SP 2-1992. A

PICKUP & Highway Cruiser camper, Ford F100, 1958, custom-cab, automatic trans., heater, overloads, step bumper, 6-ply nylon tires, \$1095. OS 6-3692. A

CHEVROLET, 1930, 4-dr. sedan special, landau top, 99% orig. parts, good tires, \$125. PL 6-7545. A

DESERT BRUSH BUGGY, \$75; camera, Aras C-3, flash & carrying case, \$25. EA 2-5136. A

OUTBOARD MOTOR, Mercury Mark 28, w/tank & remote control, 10 hours, \$225. OS 6-3448. A

RANGE, Roper, full-size, aas, oven window, light, timer, used 6 mo., \$90. 326-9106. A

BICYCLE, boy's, 26", Schwinn, balloon tires, \$20. FA 8-3306. A

CRIB & mattress, Babyline deluxe, \$25. 371-9697. A

PICKUP, 1931 Model A, orig., some parts refinished, \$300. Box 2501. A

TV, 17" Admiral, table model, \$50. OS 6-9989. A

PLYMOUTH, station wagon, 1956, 4-dr., p/steering & brakes, auto. trans., elec. windows, r/h, good tires, \$575. PL 5-4497. A

SHAVES, Remington Rolletric, \$5. PL 6-0015. A

DIAMOND RINGS, engagement & wedding, set in white gold, 5 diamonds in wedding ring, 1 lge. & 2 smaller stones in engagement ring, \$250. 393-5754. A

VOLKSWAGEN pickup, 1959, 28,000 miles, \$895. DA 6-6214. A

FURNITURE, chair, coffee table, end table, 2 lamps, \$35. 371-8977. A

ACCORDION, Universal, 120-Bass, 3-switch, w/carrying case, \$100. OR 4-1847. A

GAS RANGE, Western Holly, 43", 6-yr-old, 4-burner & ariddle, lge. oven w/ broiler drawer & separate side broiling oven, \$60. FR 6-9173. A

COFFEE TABLE, Hindu, w/2 matching end tables, cost \$275, \$95. 371-0845. A

GOLF CLUBS, Wilson, 1-2-3 woods, \$40. 731-7062. A

MOTORCYCLE, 1960 Rocket, 40 cu. in., helmet, 7/8, windshield inc., \$675. UN 8-3058. A

10 SPACES, Inglewood Park Cemetery, El Portal section, \$200 ea. cash or terms, DA 9-9464. A

STOVE, GE, double oven & broiler, \$75. 677-2346. A

MANGLE, GE, small, covered model, white enamel, \$20. FR 5-8335. A

HOBBY HORSE, 20" high, \$8.50; playpen, plastic rail caps, pad, \$11.50; steel slide, 6' \$4. PL 4-9637. A

CHEVROLET, 1953, 2-dr., stick shift, 1 owner, 56,000 miles, \$300. 377-4216. A

CAMERA, Polaroid Land, inc. light meter, auto. copier, elec. flash unit, 10 sec. pictures cost over \$250, \$95; movie outfit, 8mm, projector, film splicer, screen, \$55; twin beds, 2 sets, w/matching vanities, \$10; sofa, colonial pattern, \$15 DA 7-9291. A

STOVE, Tappan, elect., 30" oven above 4 pull-out burners, rotisserie, stainless steel & beige, 2-yr-old, \$225. OS 6-7820. A

COAT, women's, winter weight, Millium lined, wool & camel's hair, size 12, \$20; ski pants, 1 pr., women's, black, size 11, made in France, Ernst Engeles designer, \$40 value, \$20. CR 3-2194. A

CHEVROLET, Impala, 1958, r/h, power brakes, 348 ena 1-owner, 43,000 mi, \$1100. FR 9-0300. A

FALCON DE LUXE, 1962, r/h, 1962, 4-dr., 9000 mi., stick shift, \$1695. 378-6521. A

CHEVROLET, Impala, 1960, convertible, white w/blue interior, w/w r/h, power steering, \$1750. TE 3-9455. A

LAWN MOWERS, all Craftsman, hand-type, \$7.50; rotary-type, \$32.50; reel-type, \$37.50. OS 5-3080. A

TIRES, 670x15 6-ply tubeless, 5000 mi, \$55; matching coffee & 2 end tables, mahogany, dining room set, table, buffet & 4 chairs, \$50. FR 4-6841. A

VOLKSWAGEN, 1950, 2-dr., sun top, 54,000 mi., \$750. FR 1-3769. A

## NRC Ski Club Plans Outing January 12-13

The NRC Ski Club will hold its next meeting Monday, January 7, to firm plans for the upcoming Mammoth trip on January 12-13.

Time of the meeting is 8:30 p.m. Location is the Clubhouse at 12917 Cerise. This is one block south of El Segundo and one block east of Yukon.

There will also be discussions and planning for other ski trips to be scheduled as the winter season progresses.

The Mammoth trip requires that a \$6 deposit be in at Personnel Activities office by Friday, December 21.

The Club will stay at McGee Creek Lodge where the cost is pegged at \$12 a day for both days. Included is breakfast and dinner for both days; dormitory-style accommodations. All lifts are within 15 minutes of the lodge. Cost for the lifts is \$5.50 a day to the advanced levels, \$3.50 for beginners. Equipment rentals and lessons can also be arranged.

Departure for Mammoth will be Friday evening, January 11. Return will be Sunday evening, January 13.

## BUY FREEDOM BONDS

## WANTED TO BUY

STEREO OR HI-FI, preferably kit-type, 30-watt minimum amp. 323-6380. B

END TABLES, 2, walnut, dinette table & 4 chairs, refrigerator w/freezing compartment med. size, reasonable. FR 5-8778, FR 2-1736. B

## FOR TRADE

BICYCLE, trade man's deluxe for woman's bicycle, OR 7-8543. C

## RENTALS OFFERED

APT., 1-bdrm., furn., fireplace, patio, utilities paid, 1 1/2 blocks to beach, \$95, GR 2-1474. E

APT., 1 & 2-bdrm., built-ins, w/w carpets, drapes, carport, Inglewood, south of Century, \$90 & \$115 mo. OR 2-1752, PL 2-0678. E

APT., bachelor, furn., utilities paid, privacy, near La Brea & Slauson, \$70. 295-9997. E

HOUSE, furn., 1-bdrm., fenced yard, aarage, water paid, near Sepulveda in Hermosa Beach, \$85 mo. FR 9-4517 after 6 p.m. E

HOUSE, 2-bdrm., aas loa fireplace, redecorated, near Northrop, shopping schools, tile kitchen & bath, unfurn., \$90 mo. OS 5-9695. E

DUPLEX, 2 lge. bdrms, disposal, unfurn., aarage, water & lawn paid, 118th & Berendo, 7 min. from Northrop, \$100 mo. PL 4-1964. E

HOUSE, 2-bdrm., fenced yard, aarage disposal, aarage, brick patio, \$125 mo. GL 4-5993. E

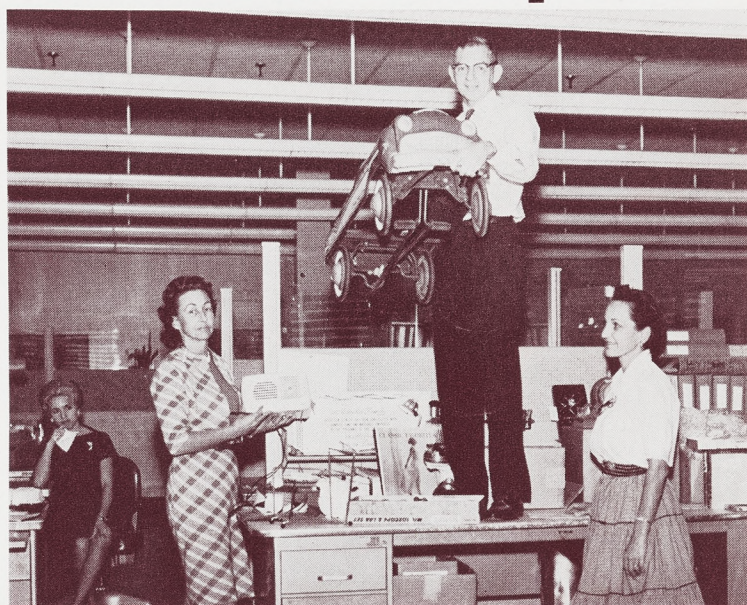
APT., furn., 2-bdrm., only 4 short blocks to Northrop, carport, disposal, rugs & drapes, \$100 mo. OS 6-1574. E

## PERSONALS

MEMBERSHIPS available in A & E Flying Club based at Hawthorne Airport, Cessna 140, \$4; 170, \$6; 172, \$6.50; Bonanza, \$10, dues \$12 month, nominal initiation fee. Prospective members invited to meeting Wed. Jan. 2, 7:30 p.m., Product Display Bldg. DA 4-2992. L

LADY desires to share 2-bdrm. apt., North Long Beach, \$59 mo. GA 3-8737. L

## Sold! For Needy Folk



**WHITE ELEPHANTS, WHITE CHRISTMAS**—Norair people in Cost Estimating, 8930, to raise money for their adopted family, held (1) a bake sale; (2) a hot dog lunch; and (3) a white elephant sale. White elephant worked like this. Everybody cleaned out garages, brought unwanted things in and Bill Lurie, who could show any professional auctioneer a thing or three, held a lunch time gavel sale. Here he holds up a toy automobile (their family had no toy automobile-size children.) Bill's willing helpers, from left, Gladys Burks, Elgia King, and Marion Webb.

## Pete Peterson, On-the-Job Record Maker, Goes Fishing

John "Pete" Peterson, Standard Tools Liaison, is all fired proof positive in everything he touches or does.

He came to Northrop 20 years ago after 15 years at the May

Company where he had been never late, never absent, never in an accident.

At Northrop he continued his May Company ways.

Never late.

Never absent.

Never in an industrial accident.

Never sick.

Pete retired last week. He was given his 20-year pin a few days ahead of time at the special request of Mr. Nolan, our general manager.

And of course there is the story within the story.

Pete left the May Company for Northrop because it was war time and 8 of his 10 children were in uniform. (One son became a Black Widow pilot in the ETO.)

Pete wanted to help out and building airplanes seemed a better way than selling suits and socks. After the war? Well, he just liked it here, so he stayed—for 20 years.

It's Merry Christmas and happy retirement days to Pete Peterson, a good and quiet man but a tiger.



**GONE FISHING**—John "Pete" Peterson, second left, 20-year man retires, receives pin few days ahead of time by special request of Corporate Vice-president and Division General Manager Dick Nolan. From left with best wishes are A. S. Turner, chief, Tool Engineering; and Johnny Mulsin, supervisor, Standard Tool Stores Operation. See story for Mr. Peterson's Norair record.





# Northrop Norair News

Issued biweekly by Norair Division of Northrop Corporation • Wednesday, January 16, 1963

AWTHORNE, EDWARDS AFB, PALMDALE

SAN ANTONIO, EL PASO

## THEN →

**JUST BEFORE THE HOLIDAY**—Northrop personnel, over 6000 strong, meet in the new addition to the assembly building to hear Northrop President Thomas V. Jones and Corporation Vice-president and Norair General Manager Dick Nolan give report on Company progress. For most, this was the first look at where the T-38 and the F-5 assembly lines were to be. The new addition main floor where people are standing is 105,000 square feet. Speakers' platform where Mr. Jones and Mr. Nolan are standing is at left, halfway down. In far background are the old T-38 and the Boeing 707 lines. For miraculous change 12 days later, see photo, below.

### TWIN ASSEMBLY LINES FOR T-38 AND F-5 READY AND WAITING

Exactly as scheduled, Norair's new T-38/F-5 assembly complex was ready and waiting for the first shift to return from the yearend holiday at 7 a.m. Wednesday morning, January 2.

Briefings on the new line had been given by supervision before the holiday.

It was a vast change from the old line that had done such good work in 1962.

When the men arrived they readily located their work areas by a prearranged color code. Very little time was lost. Company tools were checked out, work locations were mapped and when the first rivet gun boomed deep down in the line the 1963 work year was under way.

Just 12 short days before, Thursday, December 20, over 6000 Norair workers came to the new addition at 3:15 p.m. to hear Dick Nolan, Corporate vice-president and Norair general manager, introduce Thomas V. Jones, Corporation president, for a review of 1962 Company progress and a

(See columns 4 and 5 below)



## ← NOW

**NORAL**—Northrop Overhead Rail Assembly Line was ready to go when the plant reopened January 2. Photo was taken from the same position as crowd shot above. Total rail line length is 1690 feet. Total high bay length of building is 1070 feet, just 250 feet short of a quarter of a mile. Nearest line is the T-38. F-5 line parallels on the right. Note semi at end of line with T-38 loaded ready for trip to Palmdale. Stated Mr. Jones, "Norair is unique in the industry. You are to have three supersonic airplanes in assembly at the same time." He referred to the T-38, the F-5A and F-5B. For more photos see inside.

### (MORE ON NORAL ASSEMBLY LINES)

preview look at 1963 and '64.

The big, new floor was swept clean for the first time on that day and before the crowd came, echoes bounced from wall to wall.

Immediately after the talk, Facilities and Plant Engineering moved in and began to install Northrop's new twin assembly lines for the T-38 and the F-5. And as Mr. Jones said in his address, Northrop was to be unique in the aerospace industry by having three supersonic airplanes in assembly at the same time.

The exacting task of creating the 1690-foot Northrop Overhead Rail Assembly Line called for long hours and plenty of stick-to-itiveness during the holiday.

The job was done on time.

And now NORAL production. Efficient, controlled, good workmanship production. Clean, open, easy to get at production.

"We have doubled the available light," stated Jack Manion, manager, Manufacturing. "We have 80 foot-candle

(Continued on Page 2)



# NORTHROP, HAWKER SIDDELEY TO COLLABORATE ON V/STOL

Northrop Corporation will collaborate with Hawker Siddeley Aviation Limited of London in the V/STOL (Vertical and Short Takeoff and Landing) strike aircraft, it has been announced.

In the agreement between the two companies, Northrop will acquire from Hawker Siddeley technical know-how and design information on the P.1127 and related aircraft.

The P.1127 is described by its builder, Hawker Aircraft Ltd., a subsidiary of Hawker Siddeley Aviation, as the world's first operational V/STOL strike aircraft. The aircraft is able to fly forward or backward in level flight and up and down vertically. This revolutionary capability for vertical flight enables it to operate without runways. It also hovers in fixed position like a helicopter.

The P.1127 has been flown at speeds ranging from supersonic forward to about 15 knots backward.

Powered by a Bristol Siddeley Pegasus engine, the P.1127 operates on a principle of vectored thrust. The thrust of its jet engine is directed at will by the pilot in any direction in order to achieve vertical or horizontal flight, or hovering position. This permits the pilot to perform vertical takeoff by directing his jet nozzles vertically down, and, after takeoff, to perform a transition to forward flight by progressively rotating the jet nozzles to full rear position, directing the jet thrust behind the aircraft and driving it forward.

Compared to conventional aircraft, the P.1127 has only one extra control in the cockpit—the lever with which the pilot controls the engine's jet nozzles. Conventional stick and rudder controls, in addition to operating normal aerodynamic controls, also operate jet reaction controls positioned at the nose, tail and wingtips.

Construction of the P.1127 began as a private venture in May 1959, and by June 1960, Hawker obtained a British Ministry of Aviation contract for several prototypes.

The first conventional test flight was made on March 13, 1961. In September 1962, the P.1127 was demonstrated to the public for the first time with a spectacular exhibition of horizontal, vertical, hovering and backward flight at the Farnborough Air Show in England.

## NORAL

(Continued from Page 1)

illumination throughout. This is a management assist in the interest of good workmanship and precision. Also there is a relationship between mental attitudes and light. Generally speaking the brighter the light, the brighter you feel."

Mr. Nolan in commenting on NORAL stated, "Norair Operations have gone beyond the accepted in creating our new assembly facility. It is actually much more than an assembly line. It is an assembly system."

"Due to new control methods and judicious arrangement, the airplanes for the first time get the benefit of total plant coordination which translates into really fast reaction time. The system is set up for immediate response to any impediment to production flow. Operations can get their answers to problems in minutes now instead of hours."

"The supporting functions of Technical, Quality Control, Finance, Materiel, research activities stand literally at Operation's elbow."

"I personally think the new assembly system is equal to the finest in the aerospace industry. And careful cost analyses indicate that it will be most efficient. Savings that result will benefit the American taxpayer, the Company, and the Norair team."

Bob Lloyd, assistant general manager, Operations, has for many years been a tireless worker in upgrading the manufactur-



**TO HEAR COMPANY REPORT**—Northrop personnel converge on the assembly building at 3:15 p.m., Thursday, December 20 to hear Thomas V. Jones, Northrop president, give an assessment of the Company as a whole and talk about the outlook for the future. Photo shows thousands passing the T-38 line. Airplanes with canopies raised are seen upper right. Note line stations receding far into the background. F-5 line now runs parallel.

## "Operation Jobs" Eases Impact of Skybolt Layoff

"Operation Jobs"—the combined task force effort to re-locate Northrop employees displaced by the cancellation of Skybolt production—was rolling in high gear this week.

Hundreds of Nortronics personnel caught in the government's decision to drop Skybolt already had been placed in new jobs, and a 25-man relocation task force organized at the direction of President Thomas V. Jones was proving once again the ability of Northrop people working together to solve mutual problems.

When first orders were received cancelling production of the Skybolt guidance system, Northrop issued instructions that every effort would be exerted to minimize the impact of the cancellation on those who would have to leave the company.

"Between 2000 and 3000 of our people who have been doing a good job have suddenly found themselves out of work through no fault of their own," Mr. Jones said. "These people have received a tremendous 'jolt' and the effects of this sudden and unexpected loss of employment will be felt for a long time. Our efforts in behalf of these people goes beyond their departure from Northrop. We are taking steps to minimize the impact of their situation."

Vice-president William Larabee was named to head up an industrial relations task force with the specific goal of finding new jobs for displaced Northrop personnel.

A Relocation Center was established with headquarters in the Nortronics industrial relations offices. Seven special telephones—keyed to the special number of OSborne 6-JOBS (OSborne 6-5627)—were installed in order that employers could notify the task force of new job openings, and so that job-seekers could be referred readily to these new jobs.

The Relocation Center is handling up to 50 telephone calls an hour with gratifying results. Of the 2200 persons released through January 11, approximately 1000 had been placed.

Close estimates were that nearly all those displaced at Northrop would have new jobs soon, even though the total number released may reach 3000.

Hourly employees who have not returned after four weeks become eligible for payment under the Northrop Layoff Benefit program. Salaried personnel received withdrawals from funds that had accrued to them in the

Company's Salaried Savings Plan.

At Norair, at Nortronics Anaheim facility and at Ventura Division industrial relations personnel rushed into action to assist through placement of as many as possible in existing openings in those organizations.

In an unprecedented move, the company placed advertisements in the Los Angeles Times and the Los Angeles Herald-Examiner urging employers to notify Northrop of job openings in their companies so that those leaving Northrop could be referred to them. Response to the ads was remarkable. One of the reasons: The Company stated flatly in the ads—"We know these people—they have proved themselves." Employers rushed to fill their job openings with people Northrop vouched for as competent, talented workers.

Employers who wanted to send interviewers to Hawthorne were assisted in establishing headquarters at the Cockatoo Hotel. At one time 20 employers were conducting interviews there.

Outstanding help was provided by the California Department of Employment.

The National Aeronautics and Space Administration, with an announced 1500 job openings at locations throughout the country, invited Northrop to refer personnel to its employment headquarters here.

In thanking employees for their valuable and successful work on Skybolt, Mr. Jones pointed out that the guidance development program had met its major milestone dates and had demonstrated its operational feasibility in the test program.

"The development of the astronautial guidance system by our Nortronics Division will, I am sure, be recognized as an outstanding technical achievement," he said. "I am confident that this development, as well as its various component systems, will have continuing value for other national programs."

"New contract opportunities will stem from the hardware and the astronautial guidance technology developed for the Skybolt," he said.

He pointed out also that Northrop Nortronics' manpower will still be required to meet the needs of such programs as Mark IV SINS for Polaris, automatic checkout equipment for Polaris, space electronics for NASA's Ranger and Mariner programs, and the voice-warning systems for the B-58, Minuteman, and other systems.

ing capability of Norair. Largely through his efforts, the Division has a top numerical control complex. Automated Operations Control, line stocking of parts, and many other features that have enabled Norair to keep hardware deliveries on schedule with all contractual commitments met for the past six-and-a-half years.

Mr. Lloyd said, "Norair's Overhead Rail Assembly Line is a logical extension of the Division's program to meet competition and beat the challenge of aerospace manufacturing. It is a Division policy to continuously build and modernize our capability so that all assignments, no matter how critical or exacting, can be performed with dispatch and in the finest quality and at lowest cost."

Mr. Mannion says that NORAL is a working testimony of team attitude, receptiveness, and cooperation. "Production supervision working under the direction of Al Carr, superintendent, T-38 and F-5 Assembly, formulated the initial rail and trunion concept. They made small scale models to further demonstrate and advance their idea. Tooling and Plant Engineering refined the plan, made cost analyses and proved that the method was feasible."

"NORAL is the end result of total Manufacturing effort."

"Even the dynamic colors of the line stem from this same team approach. Dick Beck, director, Manufacturing Engineering, held an 'art festival' complete with color jury to get the best treatment for the system. He held consultations with John Bellevue, director, Graphic Services, and Harold Pershing, supervisor, Art Services, who then designed a scheme based on blue and yellow and orange that gives the impression of space and roominess and cleanliness. It is attractive to all who see it. Workers, customer, everyone."

The Division expects to show marked improvement in manufacturing efficiency as a result of

the NORAL system. All areas of the airplanes are open and easy to get at. Contributing features such as rotating holding fixtures, work platforms placed at optimum work level; all parts, even long rails and other structural members are stored 100 per cent at the work station where they belong. Ease of moving the line is a big factor. Now two men can move a ship from one station to the next. Formerly this operation, including moving tools and work aids and cleaning up, required as high as six men.

Built-in potential is another feature. NORAL's twin T-38 and F-5 lines can be supplemented with a third line using the present system as a base.

NORAL presents special attractions for the T-38/F-5 program. Cost controls that have kept the T-38 below industry average, have already been applied to the F-5. By utilizing experienced personnel from the T-38 and taking advantage of the common design and common learning, the F-5 will be produced at a very low airframe cost as compared to an article constructed without this same "family" advantage.

Manufacturing Control service within the new assembly building has been modified and expanded commensurate with manufacturing and assembly. In the rearrangement, Manufacturing Control personnel have been stationed nearer the work areas that they service, resulting in a savings to both Manufacturing and Service organization personnel.

## Northrop Norair News

VOL. 20 NO. 26

1001 E. Broadway, Hawthorne, Calif.

A NORTHROP CORPORATION

PUBLICATION

NORAIR DIVISION

Published every other Wednesday

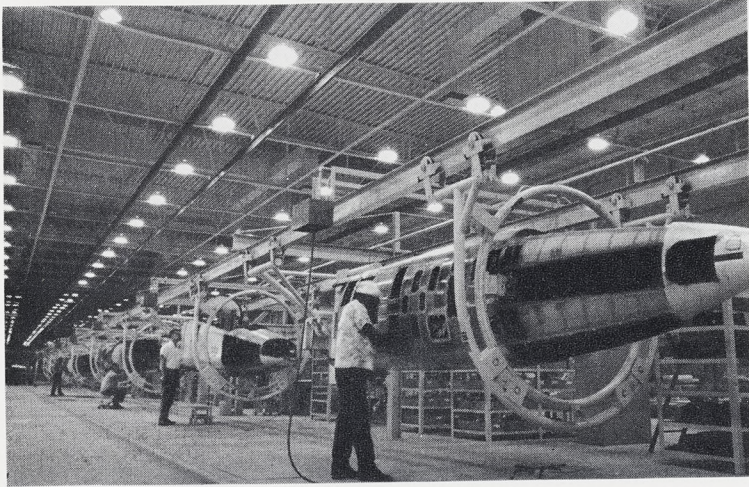
CHARLES BRADFORD, Editor

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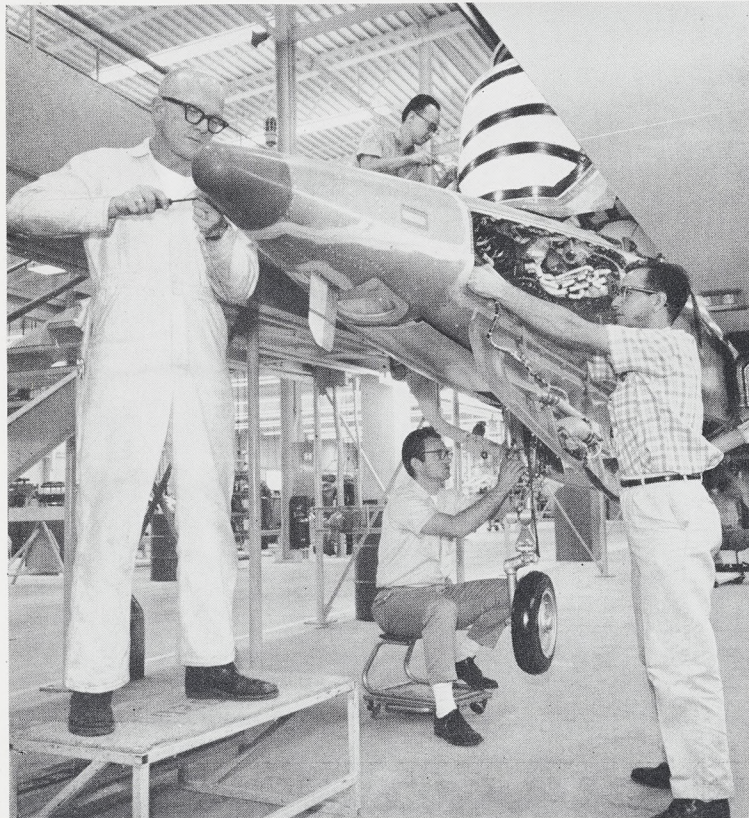
Outside lines—OR 8-9111, OS 5-4611.



# Northrop Overhead Rail Assembly Lines



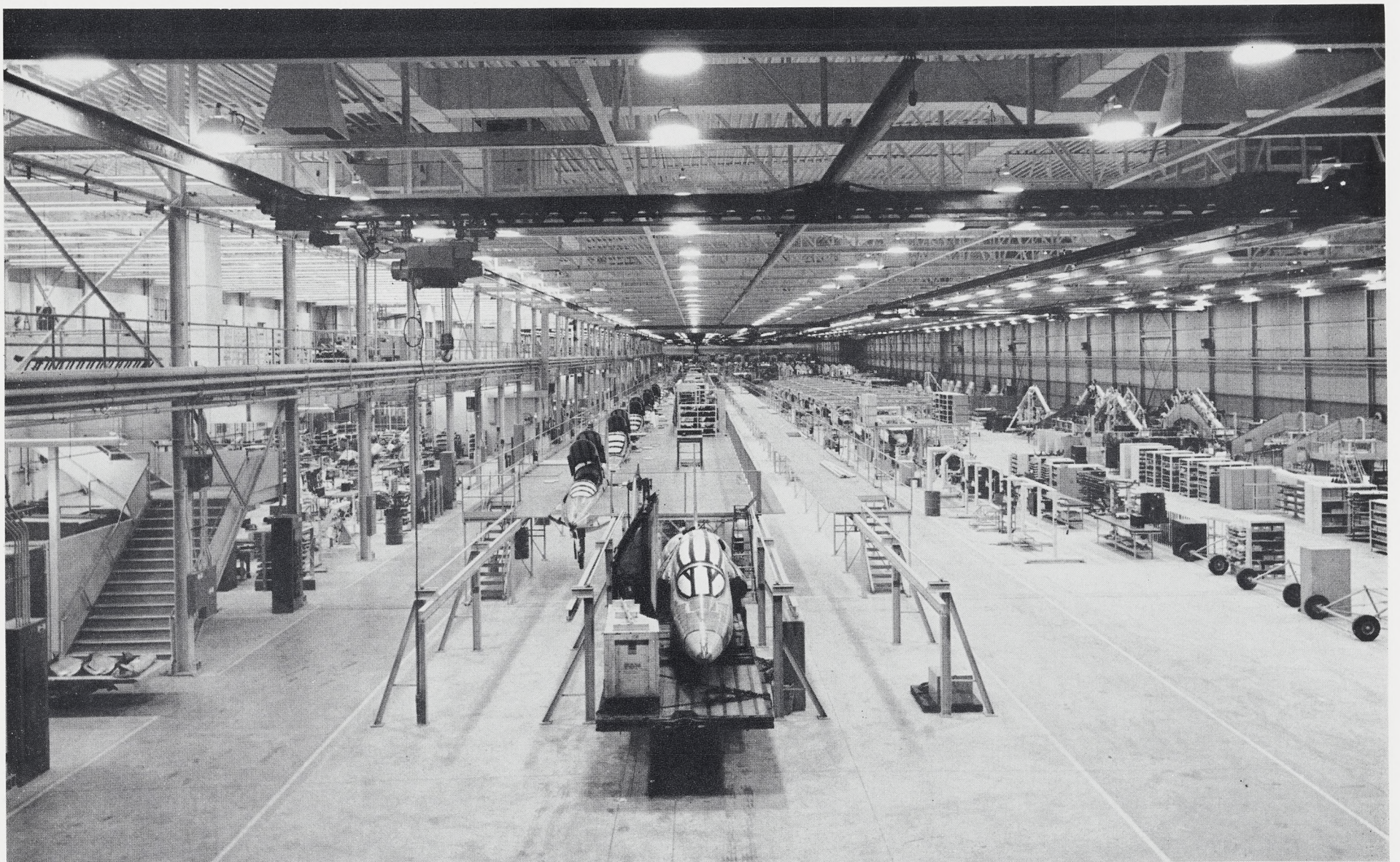
**EASY TO LOOK AT** — and easy to get at. Forgive the localism but it is so true. Photo shows the forward fuselage line with T-38 assemblies going through. From left are night men, R. H. Bopp, rigger; F. C. Patino, mechanic; Murray Colwell, Quality Control; and W. M. Lee, mechanic. Assemblies supported by trunnions can be rotated to any degree for best accessibility and working level. Note "clean sweep" floor.



**RIGHT HEIGHT** — Norair Manufacturing men who served as "guinea pigs" when NORAL was designed demonstrate how optimum work levels were established. From left front are Jim Powers, Hydraulics; Stanley Hurst, Electrical; Dick Masters, Hydraulics. By cockpit at upper working level is Bob Nakayama, Electrical Quality. NORAL evolved from production supervision concepts. They made scale models to help prove feasibility of overhead rail method.



**LANDING GEAR VIEW** — Photo shows significant details of NORAL suspension. Two cradles, fore and aft, carry the airplane. Moves from stations can be made with two men. Old system took six men. Note good housekeeping, easy access all around. This station is end of line and the airplane is ready to be loaded on semi which will be parked just at right. Foreman Whitey Lowe checks last minute paperwork.



**"EQUAL TO THE FINEST"** — so stated Mr. Nolan in commenting on NORAL, Norair's new assembly system. This photo was taken just outside "flight" door at night. T-38 line with airplanes in stations is at left. Semi with T-38 pointing at cameraman is ready for delivery to Palmdale. Wing lines,

forward fuselage lines are far right. F-5, with airplane's major assemblies now starting down the line, will parallel the Talon. Dollies at right are for return of cradles and trunnions. Second floor, now being walled in at left, totals 30,000 square feet. Assembly building is 1070 feet long.





## RIDES WANTED

7 a.m. — 3:45 p.m.

PIONEER & ALONDRA, Norwalk. R. K. Williamson, ext. 1464, 864-7111. 2  
BOLSA & GOLDENWEST BLVD., Huntington Beach. Stewart Berkis, ext. 2173, TW 7-4851. 2

7:30 a.m. — 4:15 p.m.

CULVER BLVD. & SAN DIEGO FWY. OR SEPULVEDA BLVD., Culver City. E. D. Peden, ext. 4284, EX 1-7014.  
CRENSHAW & PACIFIC COAST HWY., Torrance. Barbara Gillette, ext. 691, 326-8765. 3

8 a.m. — 4:45 p.m.

WEST 190TH & HAWTHORNE BLVD., Redondo Beach. Rachel Ann Pluth, ext. 2123, 371-5782. 5  
GREVILLE & BUCKTHORNE, Inglewood. Minnie C. Lauer, ext. 2191, OR 4-1847. 5

MANHATTAN BEACH & ARDMORE, Manhattan Beach. Bob Reed, ext. 1352, 1364, FR 2-0554. 5  
SEPULVEDA BLVD. & CABRILLO, Torrance. Bill White, ext. 2313. 5  
CHERRY AVE. & 4TH ST., Long Beach. F. E. Guadañini, ext. 2313, 433-1406. 5

## RIDES OFFERED

7 a.m. — 3:45 p.m.

PIONEER & ALONDRA, Norwalk. R. K. Williamson, ext. 1464, 864-7111. 12  
BOLSA & GOLDENWEST BLVD., Huntington Beach. Stewart Berkis, ext. 2173, TW 7-4851. 12  
KNOTT & CHAPMAN, Garden Grove. C. W. Goodwin, ext. 545, TW 3-8798. 12

8 a.m. — 4:45 p.m.

MANHATTAN BEACH & ARDMORE, Manhattan Beach. Bob Reed, ext. 1352, 1364, FR 2-0554. 15  
SEPULVEDA BLVD. & CABRILLO, Torrance. Bill White, ext. 2313. 15  
CHERRY AVE. & 4TH ST., Long Beach. F. E. Guadañini, ext. 2313, 433-1406. 15

## BBSF Classified Ads

BBSF classified ad service is provided free of charge to all Northrop Norair personnel.

Ads for agencies, commercial enterprises and private businesses are not accepted.

Deadline is noon Wednesday, one week before publication.

## FOR SALE

HOUSE, 3-bdrm. & den, w/w carpets, drapes, all elec., built-ins, Waste King dishwasher, walled-in back yard, \$29,500. OR 8-8080. A

MANGLE, small, Thor, white, \$20. OS 5-6016. A

MERCEDES-BENZ, 1961, 220S, grey-white, 4-dr., 16,000 mi., \$3400; Volvo, 1962, 122S, slate blue, 4-dr., 11,000 mi., \$2100. FR 5-9842. A

CORVAIR MONZA, 1962, r/h, w/w, 4-sp., seat belts, maroon w/black interior, 8000 mi., \$2150. OR 2-5306. A

CHEVROLET, 1953, 2-dr. sedan, 6 cyl, stick, new battery and parts, recently overhauled, \$225. DA 9-2298. A

HAM RADIO EQUIPMENT, Globe 680 Scout, \$37.50; Globe Linar kit, new, LA-1, \$67.50; Globe Chief, \$20; FM radio, new, auto, \$40; 2 Smure dispatcher's microphones, \$10 ea.; Mylar recording tape, 1800 ft., \$2; 2400 ft., \$2.35. WE 3-6665. A

FUR COAT, dark brown, dyed squirrel Locke w/mink coat tailoring, 3/4 length, size 14-16, cost \$300. \$75. FA 0-2862. A

CADILLAC, 1955, good condition, factory air conditioned, \$695. OR 3-1539. A

CADILLAC, convert., 1950, good condition, wire wheels, radio, \$195. OR 1-2776. A

BACKPACK frame & bag, G.I., \$5; car radio, 6-volt, \$5; saw arbor, 3/4", Craftsman, \$1; golf cart, \$8; light fixture, large rustic hanging crossed oxen yokes, \$8; model railroad equipment, 12-0 gauge, Tru-scale roadbed, 1-48" radius circle 0-gauge Tru-scale HO-gauge rail & roadbed, \$4. GE 1-4233. A

MERCURY, 1956, 2-dr. sedan, r/h, w/w tires, \$400. 378-5924. A

CHEVROLET, 1956, 2-dr. sedan, 210 series, \$325. OR 4-1847. A

CHEVROLET, 1956, 6-cyl., stick shift, 4-dr., rebuilt eng., new tires, \$695. Box 2601. A

OLDS 88, 1954, 2-dr., h/top, all equipment, orig. owner, best offer to \$489. FR 8-2532. A

COFFEE TABLE, black marproof top, 2 step end stands, \$10; divan, \$7. FR 2-1278. A

## FOR SALE

GAS RANGE, Autolec, about 1956, full size, condition good. \$25. FR 7-4437. A  
HOUSE TRAILER, Flamingo, 1955, 1-bdrm., full bath, air cond., fiberglass awning, fully furn., 6'x8' outside storage cabinet. \$1600. OR 4-1478 after 5 p.m. & weekends. A

LAWN MOWER, power & reel-type, newly sharpened & adjusted, motor needs tune up. \$15. OS 5-7740. A

BUICK, Super, 1954, h/top coupe, auto, trans., r/h, power steering & brakes, tinted glass, w/w tires, other extras, excellent condition. \$350. OR 0-2253. A

SKI PANTS, 1 pr., women's, black, size 11, made in France, Ernst Enale designer, \$40 value; coat, women's, winter weight, Millium lined, wool & camel's hair, size 12, both items \$20. CR 3-2194. A

DINING ROOM TABLE, modern, drop leaf, 4 chairs & fitted pad, \$50. OR 2-8238. A

HOUSE, 2-bdrm., in South Bay, large utility room for washer & dryer, detached garage w/workshop facilities & storage space, covered patio w/barbecue & plumbing, terms, \$14,900. FR 1-2705. A

STOVE, Tappan, elec., 30" oven above 4 pull-out burners, rotisserie, stainless steel, beige, 2-yr.-old, \$225. OS 6-7820. A

BICYCLE, boy's, 26", 3-sp., \$17.50. PL 5-4497. A

APARTMENT BLDG., 4-unit, 1-yr.-old, 1 3-bdrm. studio-type, 1 1/2 bath, fireplace, 1600 sq. ft., 3 2-bdrm. units, 900 sq. ft., sliding glass doors to patios, built-ins, disposals, carpets & drapes, carports, laundry room for rentals plus owner's shop or storage room, owner occupied 3-bdrm. unit, 2-bdrm. units rented, walking distance to Northrop & blvd. shopping, \$58,750. SP 2-1992. A

MOBILE HOME, 1959, 2-bdrm., Empire, 50'x10', 40' aluminum awning, unfurn., \$4000; Encyclopedia Britannica, 24 vols., 5 yearbooks, red binding \$150; lot, large, near Apple Valley Inn & golf course, \$4000. Box 2602. A

TR-3, roadster, 1962, 5-mos.-old, 5500 mi., w/w, r/h, soft top, tonneau cover, seat belts, \$2295. TE 3-3944. A

STOVE, 4-burner, apartment size, \$12; lantern, gasoline, single, \$5. FR 2-0149. A

HAWAIIAN GUITAR, elec., w/amplifier, bars, \$70. OS 6-1085. A

FORD, convert., 1957, excel. tires, auto, trans., power steering, r/h, \$650. 370-2274. A

REFRIGERATOR, Hot Point, 10 cu. ft., in very good condition, \$50. FR 6-9239. A

CHEVROLET IMPALA, 1958, 348" eng., r/h, auto, trans., power steering & brakes, mint green w/matching interior, \$1075. FR 4-1626. A

SHAVES, Norelco floating head, \$12.50. OR 7-8543. A

10 ACRES in Antelope Valley, \$45 down, \$45 mo. \$4500. WH 2-0674. A

TRIUMPH TR-3, 1958, 4 new Pirelli tires, 30,000 miles, \$875; Chevrolet Biscayne, 1958, 2-dr., r/h, power steering, \$800. FR 2-8922. A

FORD, Ranchero, 1959, \$1350; boat, Fincraft, w/2 30 hp motors, coast guard approved, \$750. DA 4-6203. A

PUPPIES, mixed wire-haired, \$3.50. FR 1-8590 after 4 p.m. A

5 LOTS & DUPLEX, over 1/2 acre subdivided, can be sold individually 2 blocks from lake and 1 mile from civic center in Big Bear, \$995 down, willing to take 1st or 2nd trust deed, \$9950; house, 3-bdrm., near Northrop, w/w carpeting, drapes, aqbaque disposal, large fenced yard, detached double garage, FHA financed, \$20,900. PL 5-2563 after 4:30 p.m. A

CADILLAC, 1946, convert., in running condition, good top, \$65; boat, 16' fiberglass w/trailer, \$175. CR 5-4922 eveninas. A

ACCORDION, Italian make Finzi, semi-professional, 10 switches, 4-bass, \$125. FR 1-1070. A

## WANTED TO BUY

ELECTRIC MOTOR, 3/4 hp, in good working condition. EA 2-5136. B

PROPERTY, home or income, South Bay or beach area. FR 9-4517 after 7 p.m. B

FENCING FOILS & masks & 20-gauge shotgun. OS 6-8331. B

HI-FI stereo components, not less than 15 watts per channel. 323-6380. B

SHOP MANUAL for 1957 TR-3, or will trade for MG shop manual, 756-8205. B

## FREE (to be given away)

LARGE WHITE RABBIT. OS 6-4388. D

## RENTALS OFFERED

APT., 2-bdrm., modern, w/w carpet, drapes, built-ins, aqbaque disposal, aqbaque, big patio in back, \$96. 830-1473. E

APT., 2-bdrm., unfurn., wall-to-wall carpeting drapes, range & oven, patio, aqbaque disp., laundry facilities, carport, 1 child OK., \$115 mo. OS 5-5898. E

HOUSE 1-bdrm., furn., in Hermosa, fenced yard, aqbaque, water paid, \$85 mo. FR 9-4517 after 6 p.m. E

APT., bachelor, furn., utilities paid, privacy, near La Brea & Slauson, \$67.50. AX 5-9997. E

## Speechcraft To be Offered By T-M Club

The NRC Toastmasters Club 212, Bill Justice, commissioner, has revealed big news for 1963.

Speechcraft meetings, a new adventure in learning to talk before an audience, will start January 24 and continue for four weeks through February 11.

Bill states that the Toastmasters will meet at the Cockatoo at Imperial Highway and Hawthorne Boulevard for dinner. Time is 6:30 p.m. for each of the four evenings. Cost of the package for the four meetings including dinner is \$15.

"Join us," says Bill. "Speech opportunity is really knocking this time. You will find this T-M training makes for better listening and thinking, as well as speaking."

For enrollment cards call Personnel Activities, extension 2784. Deadline for signups is January 18.

## THE BOSSA NOVA BEING TAUGHT AT CLUBHOUSE

What's bossa nova?

It's a dance.

It will be taught starting the evening of January 17, in the NRC Clubhouse, states Wayne Lee, Norair dance commissioner.

There are two classes. The first from 7 to 8:30 p.m. for the bossa nova and tango and the second will be from 8:45 to 10:15 p.m. for the bossa nova and the waltz.

Cost for the lessons for the 10-week series will be \$10.

Registration nights will be limited to January 17 and January 21.

Bill Martin is the instructor. His method of changing partners at regular intervals assures plenty of dancing action for everyone.

## TRAP AND SKEET SCHEDULES SET

The NRC Trap and Skeet Club resumed shooting schedules this month, it has been announced by Bob Bagby, Norair commissioner.

The first outing was January 12. The next one is January 26 with meets projected for alternate Saturdays thereafter.

The Club shoots at Rancho Angeles Gun Club, 19140 South Main Street in Gardena.

Activities get under way at 10 a.m. and continue throughout the day.

Bob asks that in order to complete shooting averages which were started January 12, all members who have not already done so attend the January 26 meeting.

## RENTALS OFFERED

APT., 1-bdrm., unfurn., w/aqbaque, water pd., 2 blocks from beach, center of Manhattan Beach, \$110 on year lease. FR 4-3365. E

## RENTALS WANTED

GIRL 23 wants to share beach apartment w/same. FR 4-7754 eveninas. F

## LOST

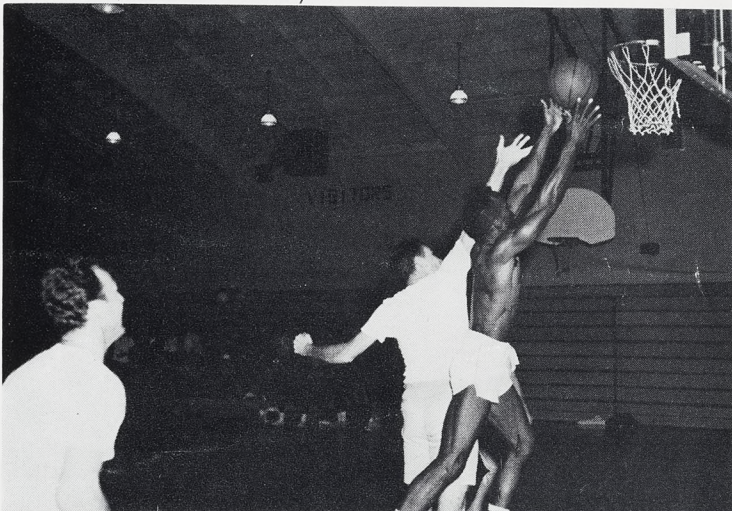
GLASSES, 1 pr., name & address on inside of case, Norair Lost & Found, ext. 1972. J

## FOUND

WRISTWATCH, ladies' gold. Norair Lost & Found, ext. 1972. K



**BASKETBALL**—Regular NRC basketball league play is now under way Thursday evenings and Saturday mornings at Leuzinger High School. Action shots give vivid idea of speed and quality of play. From left, John Etheredge, Don Gurland, Charles Talbott, Chet Kolar and Ed Sully, jumping, center; Al Herring, official; Bob Kreisel, and Don Abeyta.



**TWO POINTS**—Henry Andrews gets a rebound while Robert Ridley, left, and Ron Milanovich plus player out of sight make the going rough and tough. "Spectators are welcome and players are needed," says Bill Greene, basketball commissioner. "We need both rooters and shooters. So come on over."

## NRC Christmas Golf Meet Won by Bob Darnell, 151

The NRC Christmas golf tournament which took place December 27 and 28 for 36 holes at Los Coyotes and Mesa Verde Country Clubs drew 117 players, ranks as one of the best club affairs of the year.

Overall low gross was won by Bob Darnell with a 75 and 76 for a 151.

Low net went to Joe Seman

## STAMP AND COIN BUFFS INVITE ALL

The NRC Stamp Club, Claude Pike, Norair commissioner, has extended an invitation for one and all to attend their next monthly meeting, Monday, January 28, 7:30 p.m. at the new NRC Clubhouse. Location of the new Clubhouse is 12917 Cerise in Hawthorne. It is one block east of Yukon and one block south of El Segundo.

"Bring your stamp albums and surplus stamps," states Claude. "This means coin collectors, too. We want to get this activity started again. If you are not a collector at the moment, come anyway and see how interesting this hobby can be."

The Stamp Club will talk about plans for 1963 and suggestions to help round out the program will be in order.

The Stamp Club meets regularly on the fourth Monday of each month.

## FOR SALE OR TRADE

T-BIRD, 1957, black, porthole top, U.S. Royal Master tires, auto, trans., r/h, \$1695 or trade for 1957 passenger car, 378-1307 after 6 p.m. or Sundays. M

for 135.

First flight was a tie between Dick Outcault and John Reptberg with 138. Second flight was won by Don Riddle, 144. Third flight went to Arthur Brock, 144 and fourth flight to Archie Kne with a 146.

Prizes ranging as high as \$2 were in the form of merchandise certificates from the Boston Stores.

Next golf tournament has been scheduled for Whispering Lake on January 19. Starting time is 10:30 a.m. with green fees plus prize fund pegged at \$4.50.

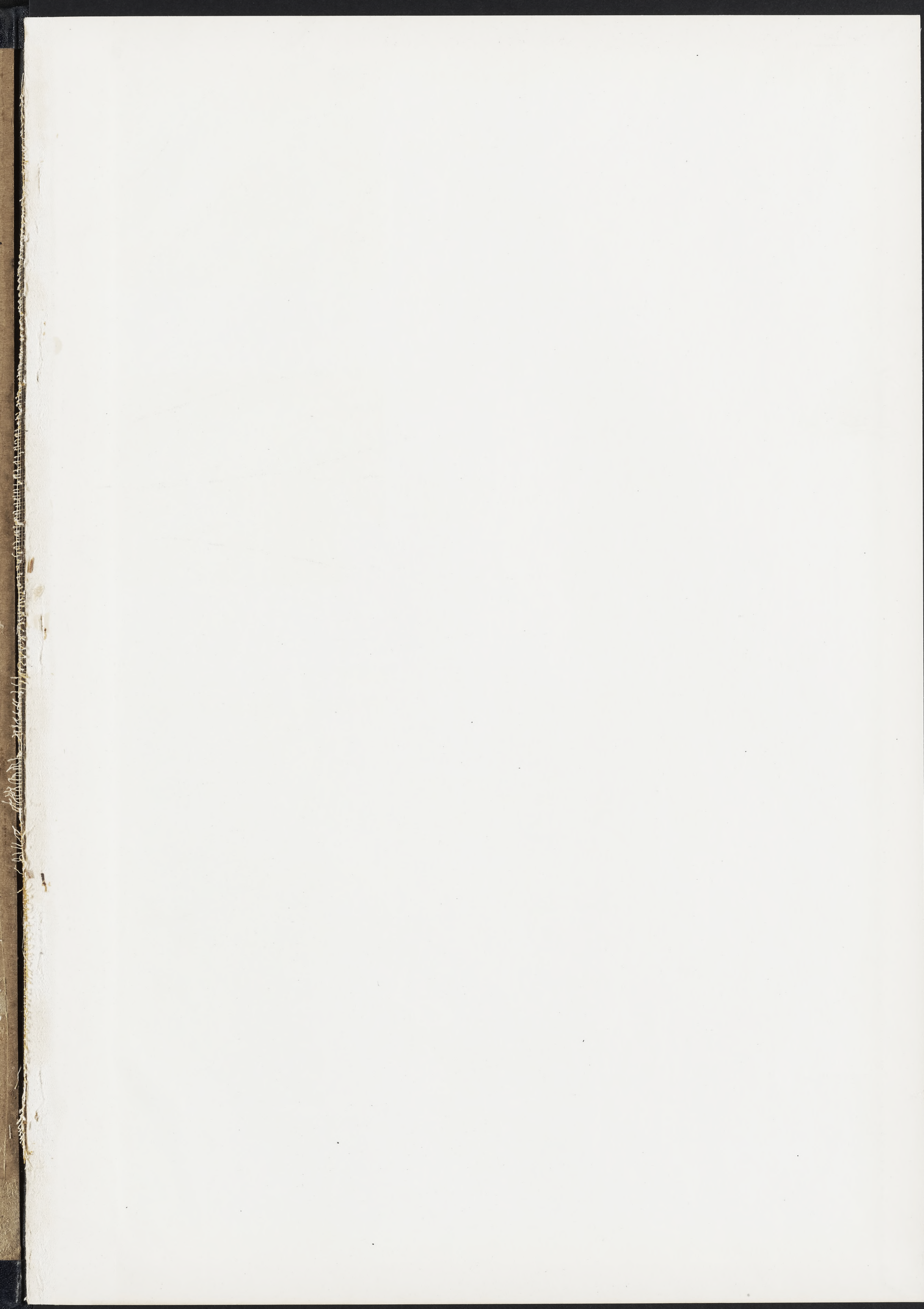
## HOLIDAY KEG TOURNEY A BIG SUCCESS

The NRC Christmas bowling tournament was its usual big success with well over 100 people taking part.

Winners in the various categories who took home top money and trophies were Ken Guertin, men's singles; Walt Maschke and Herschel Dean, men's doubles; Janet Paine, women's singles; Bettie Bradley and Donna Stinson, women's doubles; Jane Paine and M. L. Wegnes, mixed doubles.

Special trophy winners were Lee Davidson, men's high handicapped game; R. C. Dahlman, men's high scratch game; Dean Zollinger, men's high scratch series; Pat Nichols, women's high handicapped game; Marjorie Maschke, women's high scratch game; and Janet Paine, women's high scratch series.







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